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Guidance for the Reregistration of Pesticide Products Containing Diquat Dibromide as the Active Ingredient

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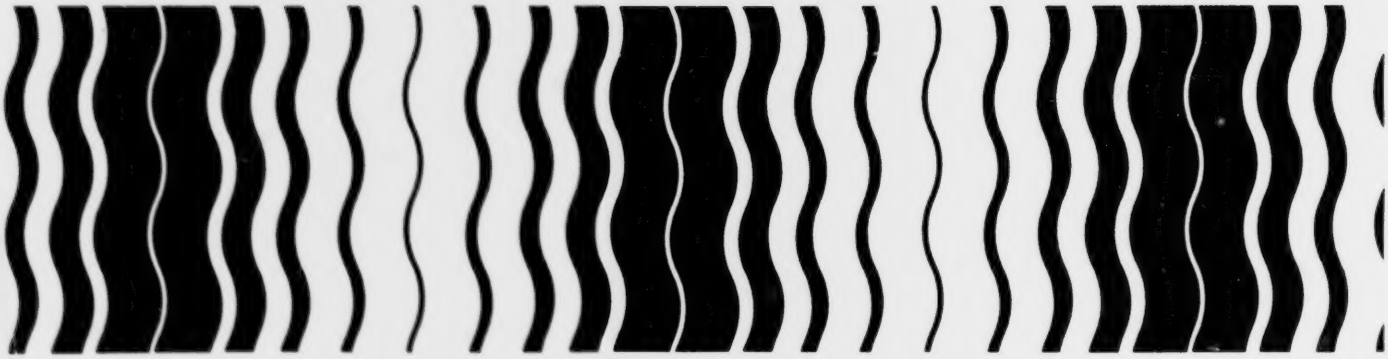

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This document contains information regarding the reregistration of pesticide products containing the subject active ingredient. The document includes how to register under a registration standard, regulatory position and rationale, and summaries of data requirements and data gaps. Also included is a bibliography containing citations of all studies reviewed by EPA in arriving at the positions and conclusions contained in the standard.

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GUIDANCE FOR THE REREGISTRATION OF PESTICIDE PRODUCTS

CONTAINING AS THE ACTIVE INGREDIENT

DIQUAT DIBROMIDE
(032201)

CASE NUMBER 0288

CAS 85-00-7

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D.C. 20460

JUNE 1986

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I. INTRODUCTION

The Registration Standards Program

EPA has established the Registration Standards program in order to provide an orderly mechanism by which pesticide products containing the same active ingredient can be reviewed and standards set for compliance with FIFRA. The standards are applicable to reregistration and future applications for registration of products containing the same active ingredient. Each registrant of a product containing an active ingredient subject to this Standard who wishes to continue to sell or distribute that product must bring his product and labeling into compliance with FIFRA, as instructed by this Standard. Pesticides have been grouped into use clusters and will be reviewed on the basis of a ranking scheme giving higher priority to (1) pesticides in clusters used on food and feed crops; and (2) pesticides produced in large volumes.

The Registration Standards program involves a thorough review of the scientific data base underlying a pesticide's registration. The purpose of the Agency's review is to reassess the potential hazards arising from the currently registered uses of the pesticide; to determine the need for additional data on health and environmental effects; and to determine whether the pesticide meets the "no unreasonable adverse effects" criteria of FIFRA. In its review EPA identifies:

1. Studies that are acceptable to support the data requirements for the currently registered uses of the pesticide.

2. Additional studies necessary to support continued registration. The additional studies may not have been required when the product was initially registered or may be needed to replace studies that are now considered inadequate.

3. Labeling revisions needed to ensure that the product is not misbranded and that the labeling is adequate to protect man and the environment.

The detailed scientific review, which is not contained in this document, but is available upon request, focuses on the pesticide active ingredient. The scientific review primarily discusses the Agency's evaluation of and conclusions from available data in its files pertaining to the pesticide active ingredient. However, during the review of these data the Agency is also looking for potential hazards that may be associated with the end use products that contain the active ingredient. The Agency will apply the provisions of this Registration Standard to end use products if necessary to protect man and the environment.

EPA's reassessment results in the development of a regulatory position, contained in this Registration Standard, on the pesticide and each of its registered uses. See Section IV - Regulatory Position and Rationale. Based on its regulatory position, the Agency may prescribe a variety of steps to be taken by registrants to maintain their registrations in compliance with FIFRA. These steps may include:

1. Submission of data in support of product registration;

2. Modification of product labels;

3. Modifications to the manufacturing process of the pesticide to reduce the levels of impurities or contaminants;

4. Restriction of the use of the pesticide to certified applicators or other specially trained individuals;

5. Modification of uses or formulation types; or

6. Specification of packaging limitations.

Failure to comply with these requirements may result in the issuance of a Notice of Intent to Cancel or a Notice of Intent to Suspend (in the case of failure to submit data).

In addition, in cases in which hazards to man or the environment are identified, the Agency may initiate a special review of the pesticide in accordance with 40 CFR Part 154 to examine in depth the risks and benefits of use of the pesticide. If the Agency determines that the risks of the pesticide's use outweigh the benefits of use, the Agency may propose additional regulatory actions, such as proposed cancellation of uses of the pesticide which have been determined to cause unreasonable adverse effects on the environment.

EPA has authority under the Data Call-In (DCI) provisions of FIFRA sec. 3(c)(2)(B) to require that registrants submit data to answer our questions regarding the chemical, toxicological, and environmental characteristics and fate of a pesticide. This Registration Standard lists the data EPA believes are necessary to resolve our concerns about this pesticide. These data are listed in Section VI - Requirement for Submission of Generic Data, and Section VII - Requirement for Submission of Product-Specific data. Failure to comply with the DCI requirements enumerated in this Registration Standard may result in issuance by EPA of a Notice of Intent to Suspend the affected product registrations.

Registrants are reminded that FIFRA sec. 6(a)(2) requires them to submit factual information concerning possible unreasonable adverse effects of a pesticide at any time that they become aware of such information. You should notify the Agency of any information, including interim or preliminary results of studies, if those results suggest possible adverse effects on man or the environment. This requirement continues as long as your products are registered by the Agency.

II. CHEMICAL COVERED BY THIS STANDARD

A. Description of chemical

The following chemical is covered by this Registration Standard:

Common name: Diquat Dibromide
Chemical name: 6,7-Dihydrodipyrido(1,2-a:2',1'-c) pyrazinediium dibromide
Chemical Family: Bipyridylium, dipyridylium
CAS Number: 85-00-7
OPP (Shaughnessy) Number: 032201
Empirical Formula: $C_{12}H_{12}N_2$(ion); $C_{12}H_{12}Br_2N_2$(dibromide)
Trade names: deiquat, reglon, Aquacide, Dextrone, FB/2, Ortho Diquat, Reglone, Reglox, Weedtrine-D
Physical Characteristics: Yellow (solid); Red-brown (liquid)
M.W.: 184.0(ion); 344.0(dibromide)
Melting point (solid): 300°C
Boiling point (liquid): 100°C
Specific gravity: 1.22-1.27 @20°C
Very soluble in water; slightly soluble in alcohol and hydroxylic solvents; insoluble in non-polar organic solvents
Non-volatile

B. Use Profile

Diquat is a non-selective contact herbicide, desiccant and plant growth regulator registered for use as a general herbicide for control of broadleaf and grassy weeds in terrestrial non-crop and aquatic areas; as a desiccant in seed crops and potatoes; and for tassel control and spot weed control in sugarcane. Diquat may be foliarly applied broadcast by ground equipment or aircraft, or directed spray by ground equipment; or it may be injected below the water surface (for submerged weeds). Based on data compiled in 1983, of the total amount of diquat dibromide applied in the U.S., approximately 27% was used on rights-of-way; 22% on industrial/manufacturing sites; 21% on golf courses/ ornamental plantings; and 18% for aquatic weed control. The remaining 12% included sites such as agricultural crops, domestic dwellings, and parks.

Diquat was first registered for use in 1961 and is produced by Chevron Chemical Company of Richmond, California, from active ingredient manufactured outside the U.S. Diquat is available as a 37.45% active ingredient (A.I.) formulation intermediate, a 35.3% A.I. manufacturing concentrate and end-use formulations with concentrations ranging from 0.09% to 35.3% A.I.

III. AGENCY ASSESSMENT

A. SUMMARY

The Agency has reviewed data submitted to support the registration of diquat dibromide. Numerous data gaps exist for diquat dibromide and few definitive conclusions can be made. However, based on the available data, the Agency has reached the following interim conclusions. A detailed discussion of the points summarized below appears in Section B.

1. Cataract formation is the most significant chronic toxicity response to diquat dibromide currently recognized. Diquat dibromide is not considered, at this time, to cause oncogenic, teratogenic or reproductive effects. Additional chronic data are required and further evaluation will be conducted.

2. Ethylene dibromide (EDB), a known carcinogen, is a process impurity in diquat dibromide formulations. Based on a risk assessment discussed in Section B, the Agency has concluded that the presence of EDB as a result of approved uses of diquat dibromide will not pose a significant risk to human health.

3. Diquat dibromide appears to be acutely toxic through dermal exposure. The potential for toxicity is increased with repeated exposure. This exposure can be reduced through the imposition of protective measures (restricted use classification, protective clothing requirements, precautionary labeling).

As a result of this review, the Agency has identified missing data necessary to evaluate the environmental and human risks associated with the use of diquat dibromide. These data must be developed in order to maintain registrations of products or register new products containing diquat dibromide. A summary of these data gaps appears in Figure 1. Please note that this is only a summary and complete details can be obtained by referring to the tables in Appendix I.

The Agency has also determined that certain label restrictions or revisions are necessary. These include:

Restricted Use Classification
Protective Clothing Requirements
Crop Rotation Restriction
Dermal Exposure Precaution
Reentry Intervals
Signal Word Revision

The Regulatory Position and Rationale section discusses the Agency's position on each of these restrictions and the Required Labeling section contains the specific wording required for each of the labeling revisions.

DIQUAT DIBROMIDE - DATA GAPS

(Please refer to the tables in Appendix I for detailed information regarding these requirements)

Toxicology

Acute Oral Toxicity - Rats
Acute Dermal Toxicity - Rabbits, Rats
Acute Inhalation Toxicity - Rats
Primary Eye Irritation - Rabbits
Primary Dermal Irritation - Rabbits
21-day Dermal Toxicity - Rabbits, Rats
21-day Inhalation Toxicity - Rats
1-year Chronic Feeding Study - Dogs
Mutagenicity Studies
Oncogenicity Studies (additional information
   needed for existing rat and mouse studies)

Ecological Effects

Avian Dietary Toxicity
Freshwater Fish Toxicity
Aquatic Toxicity (Invertebrates and Marine Species)
Phytotoxicity
Nontarget Insect

Environmental Fate/Exposure

Degradation Studies (except hydrolysis)
Metabolism Studies
Mobility Studies
Dissipation Studies
Accumulation Studies
Reentry Studies
Spray Drift Studies
Other Exposure Data

Product Chemistry/Residue Chemistry

Product Chemistry
Selected Residue Studies
Plant and Poultry Metabolism
Residue Analytical Method

FIGURE 1

B. PRELIMINARY RISK ASSESSMENT

Numerous data gaps exist for diquat dibromide and few definitive conclusions can be made pending receipt of the required data. The following assessment is based on the limited data available, and, therefore, is subject to change.

1. Acute and Subacute Toxicity. Adequate data are not available to conclusively determine the acute toxicity of diquat dibromide and additional studies are required. However, based on the available acute dermal toxicity data, diquat dibromide is tentatively classified as a Toxicity Category I chemical.

   Available acute data define the approximate LD_{50}s for both oral and dermal exposure routes. These studies do not, however, adequately describe the onset and duration of the symptoms, the cause of death, or the resultant internal changes. Data indicate that the oral acute toxicity had an LD_{50} of 400-440 mg/kg (rats) and the acute dermal LD_{50} had a range of 50-100 mg/kg (rats). Data from subacute toxicity studies indicate that the multi-dose dermal LD_{50} was in the range of 6-40 mg/kg (rabbits). Available data also indicate that diquat dibromide causes ulceration and other signs of irritation of the gastric mucosa following oral and/or dermal exposure.

   Based on acute and subchronic animal studies, diquat dibromide was found to cause serious toxic effects and mortality at very low doses. Although human absorption of diquat dibromide has been shown to be low (0.3%), the demonstrated toxicity of this compound in animals is sufficient to raise serious human health concerns following dermal exposure.

   Data show that diquat dibromide is not a skin sensitizer. Therefore, no additional dermal sensitization data are needed.

   Additional LD_{50} studies with rabbits and rats as well as acute dermal irritation and subchronic dermal toxicity studies are required to fully assess the acute and subacute toxicity of diquat dibromide.

   In order to evaluate reports of ulceration and other irritations of the gastric mucosa, the minimum levels at which diquat dibromide can cause lesions in the gastric mucosa and intestines resulting from both oral and dermal exposure must be determined. In addition, the causes of death in these studies must be determined and reported. Because of the nature of the effects observed in the available data, additional acute oral and dermal studies are required to determine NOELs.

Available acute inhalation studies indicate that diquat dibromide causes lung abnormalities. However, due to deficiencies in these studies, additional data are required to fully assess these effects. Therefore, both acute and subchronic inhalation toxicity studies are required.

A reliable eye irritation study is not available and is required.

2. Chronic Feeding/Oncogenicity Data. Diquat dibromide administration has resulted in cataract formation in both rats and dogs. The NOELs for these species are 0.22 mg/kg/day (5 ppm) and 1.7 mg/kg/day respectively, based on available information. No compound related increases in cataract formation were evident in the mouse. Cataract formation is the most significant specific chronic toxicity response to diquat dibromide currently recognized. However, formation of cataracts required several weeks exposure at the highest dose levels tested and at the lower dose levels, considerably longer periods were required for this condition to develop. Further evaluation will be conducted when additional chronic data are received.

   A rat chronic feeding/oncogenicity study tentatively indicates that diquat dibromide is not oncogenic up to 375 ppm (highest dose tested [HDT]). Observed effects are lens opacity and cataracts and possible nephropathy in males. Other effects, at 375 ppm, were paracortical cell hyperplasia in lymph nodes in males. Additional historical control data and statistical analyses must be submitted before this study will satisfy data requirements.

   An 80-week oncogenicity study in the mouse is currently awaiting additional histopathological data. The tentative conclusion is that diquat dibromide is not oncogenic in the mouse at up to 300 ppm (HDT).

   Other chronic feeding studies (one in the dog and two in the rat) reported cataract formation at the mid- and high-dose levels. However, two of these studies are deficient and provide only supplementary information and the third is invalid.

3. Mutagenicity Data. Mutagenicity information available showed indications of both positive and negative responses. In some cases, however, only summaries could be obtained for Agency review. In order to assess mutagenicity of diquat dibromide, submission of all existing studies is required. Based on the results of the review of these studies, additional mutagenicity studies may be required.

   At this time, there are no acceptable chromosome point mutation assays (Ames type test) or chromosome aberration studies. To clarify the potential of diquat dibromide to cause point mutations or chromosome aberrations, new tests for these study types are required.

4. Reproduction and Teratology Data. Diquat dibromide is considered to be adequately tested for teratogenic and reproductive effects. It is not considered to be either teratogenic in rats, mice or rabbits or to cause adverse reproductive effects in rats, as discussed below.

   In one teratology study, Sprague Dawley rats were dosed at 0, 125 and 500 ppm of diquat ion which was incorporated in their diets. The maternal and fetotoxic NOELs are both 125 ppm; the teratogenic NOEL is greater than 500 ppm. No rats died and all were reported to be in good condition; no abortions were reported. Body weight gain was depressed only in the group receiving 500 ppm and this group gained 31 percent less weight than the controls and 125 ppm dose group. No other effects were reported.

   In another study, diquat dibromide was not teratogenic to Specific Pathogen-Free (SPF) mice at the 1.0 mg/kg level, expressed as diquat ion. However, this level was fetotoxic because it retarded ossification. This level also caused maternal toxicity by decreasing body weight gain and increasing the incidence of toxic symptoms. The teratogenic NOEL is 4.0 mg/kg/day.

   In a rabbit teratology study, diquat fed to pregnant Dutch rabbits for 28 consecutive days at doses of 0, 1.25, 2.5 and 5 mg of diquat ion/kg of body weight was not teratogenic at any of the levels. There was maternal weight loss at 5 mg/kg/day.

   In the three-generation reproduction study, rats were fed levels of the test material of 0, 125 and 500 ppm. No specific adverse effects on reproduction are indicated by the study at doses up to and including 500 ppm. The only abnormalities found were cataracts in animals fed 500 ppm (the parental generation) and a unilateral cataract found in one female treated at 500 ppm in the third generation.

5. Other Effects

a. Ethylene Dibromide (EDB) Contamination. The pesticide EDB is a carcinogen in laboratory animals. It has been the subject of suspension and cancellation actions (48FR46228, 48FR46234, October 11, 1983), and virtually all authorized uses of the pesticide have been discontinued.

EDB is an essential starting material in the production of diquat dibromide and remains as a process impurity in diquat dibromide formulations. However, 10 ppm is certified maximum EDB level in the formulating use products, and actual levels of EDB are lower than this maximum.

Because EDB residues remain in these formulations, there is the possibility for exposure to EDB through diquat dibromide use. For this reason, the Agency has assessed potential risks from EDB exposure resulting from the use of diquat dibromide, as follows:

Drinking Water. The maximum application rate for aquatic uses is 2 lbs. cation/surface acre-foot (4 lbs. diquat dibromide/surface acre-foot). Assuming the maximum rate is applied 6 times a year, 0.015 parts per billion (ppb) EDB would concentrate in the water.

At these application and frequency rates, treatment of a one-acre pond 1 foot deep, with no volatilization (contamination at maximum level for one week then dropping to zero), results in .0017 ppb average residue level in potable water (6/52 x 0.015 ppb). Based on this residue level, the lifetime risk for a 60 kg person drinking 2 liters of water a day from a source treated with the maximum amount of diquat dibromide is 3×10^{-6}.

This risk is calculated based on an extreme worst case scenario, and mitigating factors imply that the risk of 3×10^{-6} for EDB exposure will never occur from the use of diquat dibromide. These factors include:

- o EDB is highly volatile and levels will drop off rapidly after treatment.
- o Actual average levels of EDB are lower than the 10 ppm maximum accepted in diquat dibromide formulating-use products.

- Most treatment is to moving bodies of water and rapid dilution after treatment is likely.

- Most bodies of water are not treated 6 times a year.

- The entire body of water would not be treated each time.

- Most lakes are considerably deeper than 1 foot.

Dietary Risk. A preliminary dietary risk assessment for EDB in diquat dibromide has been conducted by assuming that EDB residues in crops are proportional to EDB levels in diquat dibromide. The theoretical maximum residue concentration (TMRC) for diquat dibromide is 0.06 mg/person/day or 8.6×10^{-4} mg/kg/day. Assuming the maximum concentration of 10 ppm of EDB in diquat dibromide, the dietary exposure to EDB is 8.6×10^{-9} mg/kg/day. The cancer potency (Q_1*) for EDB is 41 mg/kg/day. Therefore, the upper bound dietary risk is 4×10^{-7}.

However, in calculating this risk, several factors are not considered which would imply that, like EDB residues in drinking water, this level of risk from the use of diquat dibromide will not be reached. This calculation does not consider the effect of processing of commodities which contain EDB. Because EDB is highly volatile, processing would dissipate EDB which would lower residues further reducing exposure and risk. The calculation does not consider the fact that average levels of EDB are lower than the 10 ppm maximum concentration level in diquat dibromide. And, finally, the calculation is based on the TMRC for diquat dibromide which represents an upper bound of expected residues.

Mixer/Loader and Applicator Exposure. Mixer/loader and applicator exposures from both terrestrial and aquatic applications were examined using field data collected and reported by Wojeck[1] along with data on paraquat, a chemical which behaves similarly to, and has similar uses as, diquat dibromide. The aquatic studies evaluated two application techniques, handgun application to water hyacinths and direct injection for hydrilla control. Water hyacinths were sprayed with a handgun using an airboat manned

[1] G. A. Wojeck, J. F. Price, H. N. Nigg, and J. H. Stamper. Worker Exposure to Paraquat and Diquat. Arch. Environ. Comtam. Toxicol. 12, 65-70 (1983).

by an applicator and a driver using a 1.76% a.i. solution of diquat dibromide. The maximum total body exposure was measured as 2.5 and .3 mg/hr for the applicator and driver, respectively. Hydrilla was controlled by direct injection into the water using a concentrate of 2 gallon formulated diquat dibromide/acre or 4.4% a.i. solution. The applicator and mixers/loaders received exposures of 0.2 and 0.6 mg/hr, respectively.

Because a hyacinths applicator could also be a mixer/loader, combining the exposures of the hyacinths applicator and the hydrilla mixers/loaders is assumed to be a worst-case situation. These combined exposures - mixer/loader for hydrilla control and applicator for hyacinths control (2.5 + .6 mg/hr) - result in an exposure of 3.1 mg/hr worked. The upper limit on the maximum risk associated with EDB contamination can then be calculated as 1 x 10^{-6}. This assumes: 6 applications/year; 10 ppm maximum EDB contamination; 70 kg worker; 40 years of work related exposure; and 100% dermal absorption of EDB.

Terrestrial exposure does not pose a greater risk. Using the terrestrial exposure data for paraquat, and adjusting the maximum application rate of 1/2 lb. a.i./A to diquat dibromide's rate of 1 lb. a.i./A and assuming a similar acreage treated, the highest exposure rates for a combined average mixer/loader and applicator rate is .82 mg/kg/day. This figure is for the ground boom application technique which, on a daily basis, is expected to produce the greatest exposure of the customarily used techniques. The range of exposure was reported as 1.5 - 9.4 mg/kg/day.

Using 9.4 mg/kg/day exposure to EDB, the upper bound of the risk associated with EDB exposure is 6 x 10^{-6}. Again, the assumptions behind this number are: 1 application/year (dessication); 10 ppm maximum concentration of EDB; 40 years of work exposure; and 100% dermal absorption.

Based on the worst-case assessments discussed above, EPA has concluded that the presence of EDB as a result of approved uses of diquat dibromide in aquatic and terrestrial sites does not pose a significant risk to human health, either to the public or the applicator.

c. Immunotoxic and Neurotoxic Effects. Available data do not indicate that diquat dibromide has either specific immunotoxic or neurotoxic effects. No additional data are required.

d. Metabolism. Available data indicate that diquat dibromide is poorly absorbed within the gastrointestinal tract and, once absorbed, is rapidly excreted in the urine. With the exception of poultry data, no additional data are required.

e. Antidote. No specific antidote exists for diquat dibromide poisoning. Since severe gastrointestinal irritation may result from oral exposure, a specific practical treatment for swallowing of diquat dibromide must be developed.

C. OTHER SCIENCE FINDINGS

Environmental Fate. Environmental fate data are very limited. All available data, with the exception of a hydrolysis study, provide only supplementary information. Data are required.

The hydrolysis study shows that diquat dibromide is stable to hydrolysis in sterile, aqueous solutions buffered at pH 5 and 7 when incubated in the dark at 25°C for 30 days. At pH 9, diquat dibromide degraded by 10% over the 30-day incubation period.

Ecological Effects. Available data suggest that the acute hazard to non-target organisms is slight. This determination, however, is preliminary and subject to change when additional data become available. Data are insufficient to evaluate the chronic hazard to non-target organisms.

Data for birds and freshwater aquatic invertebrates indicate that diquat dibromide ranges from moderately toxic to practically nontoxic. Data for fish indicate that the toxicity to freshwater fish ranges from slightly to practically non-toxic.

Because diquat dibromide is a non-selective herbicide and since diquat dibromide has non-crop use patterns that overlap endangered plant habitats, a danger to non-target plants (including endangered species) may be present. Additional data are required to more fully assess the impact of diquat dibromide on non-target plants and endangered species.

D. TOLERANCE REASSESSMENT

Tolerances have been established for residues of diquat dibromide in raw agricultural commodities, milk, eggs, meat, fat and meat byproducts (40 CFR 180.226), as follows:

Commodity	Parts Per Million (ppm)
Cattle, fat	0.02
Cattle, meat byproducts	0.02
Cattle, meat	0.02
Eggs	0.02
Goats, fat	0.02
Goats, meat byproducts	0.02
Goats, meat	0.02
Hogs, fat	0.02
Hogs, meat byproducts	0.02
Hogs, meat	0.02
Horses, fat	0.02
Horses, meat byproducts	0.02
Horses, meat	0.02
Milk	0.02
Potatoes	0.1
Poultry, fat	0.02
Poultry, meat byproducts	0.02
Poultry, meat	0.02
Sheep, fat	0.02
Sheep, meat byproducts	0.02
Sheep, meat	0.02
Sugarcane	0.05

Tolerances have also been established for residues of diquat dibromide on irrigated crops, derived from the application of the dibromide salt to aquatic sites, in or on the following raw agricultural commodities (40 CFR 180.226). Where tolerances are established at higher levels from other uses of the pesticide, the higher tolerance also applies to residues of the aquatic uses.

Commodity	Parts Per Million (ppm)
Avocados	0.02
Cottonseed	0.02
Cucurbits	0.02
Fish	0.1
Fruits, citrus	0.02
Fruits, pome	0.02
Fruits, small	0.02
Fruits, stone	0.02
Grain, crops	0.02
Grasses, forage	0.1
Hops	0.02

Commodity	Parts Per Million (ppm)
Legume, forage	0.1
Nuts	0.02
Shellfish	0.1
Sugarcane	0.02
Vegetables, fruiting	0.02
Vegetables, leafy	0.02
Vegetables, root crop	0.02
Vegetables, seed and pod	0.02

A tolerance of 0.01 ppm has also been established for residues of diquat dibromide in potable water. A food additive regulation of 0.5 ppm has been established for processed potatoes, including potato chips (21 CFR 193.160). A feed additive regulation of 1.0 ppm has been established for dried potato waste (21 CFR 561.215).

EPA has evaluated the residue and toxicology data supporting these tolerances, and reviewed all uses of diquat dibromide. Based on the available data, the following conclusions have been made regarding residues of diquat dibromide:

- The metabolism of diquat dibromide in plants is not adequately understood. The metabolism data for animals (except poultry) are adequate.

- Tolerances of 0.02 ppm have been established for residues of diquat dibromide in fat, meat, and meat byproducts of cattle, goats, hogs, horses and sheep. Available data indicate that a more appropriate tolerance would be 0.05 ppm.

- Tolerances of 0.02 ppm have been established for residues of diquat dibromide in poultry fat, meat, meat byproducts and eggs. Available data indicate that the tolerance for eggs should be raised to 0.05 ppm. The adequacy of the remaining poultry tolerances will be assessed when additional metabolism data have been evaluated.

- Presently, potatoes are the only member of the root and tuber vegetable group with a registered food use. Therefore, a crop group tolerance for this group is not appropriate. Data support the 0.1 ppm tolerance for residues in/or potatoes and the feed additive regulation of 1.0 ppm for residue in potato wastes. Data indicate that the current 0.5 ppm food additive regulation for residues in or on processed potatoes should be increased to 1.0 ppm.

- Additional data are required to support the tolerance of 0.05 ppm for sugarcane. Residue studies are also required for processed sugarcane products (molasses, bagasse, refined sugar) and, if residues are found to concentrate, food/feed additive regulations must be proposed.

- In the past, tolerances were not required for commodities grown for seed production. Because certain seed crops are not under control of the grower and could be consumed by humans or animals, the Agency is now requiring that tolerances be established for soybeans, sorghum (grain), alfalfa, clover and vetch grown for seed if residues are found. Carrots, radishes, turnips and cucurbits grown for seed are not likely to be consumed by humans or animals; therefore, no tolerance or exemption from tolerances for these crops, which are presently special local need uses, is required.

- Tolerances of 0.02 ppm have been established in or on numerous crops for residues of diquat dibromide resulting from irrigation with water containing residues of 0.01 ppm diquat dibromide. These residues result from application of diquat dibromide in or around aquatic sites. The current data do not support these tolerances in certain crops and crop groupings. Tolerances must be increased or additional data must be submitted. For grain crops, residue data are required for rice grain and straw. The crop groupings may need to be revised in accordance with updated groupings as established in 40 CFR Part 180. These will be considered when tolerances for irrigated crops are reassessed.

- The tolerance of 0.1 ppm in fish and shellfish is not supported with data. Residue studies are required.

- A tolerance of 0.01 ppm exists for residues of diquat cation in potable water. Available data demonstrate that the nature and magnitude of residues of diquat dibromide in water are highly variable. Since the Agency no longer establishes tolerances for residues of pesticides in potable water (47FR25746, June 15, 1982), the tolerance for diquat dibromide will be replaced with a designated "acceptable residue level," if appropriate.

The acceptable daily intake (ADI) for diquat dibromide is based on a rat chronic feeding study (ICI, 1985) with a NOEL of 5 ppm. Using the NOEL of 5 ppm (0.22 mg/kg/day) and a safety factor of 100, the ADI is 0.0022 mg/kg/day and the maximum permissible intake (MPI) is 0.132 mg/day for a 60 kg person. The established tolerances result in a total theoretical maximum residue concentration (TMRC) of 0.0599 mg/day (1.5 kg diet) which corresponds to 45.35% of the MPI for a 60 kg person.

IV. REGULATORY POSITION AND RATIONALE

A. REGULATORY POSITIONS AND RATIONALES

Based on review and evaluation of all available data on diquat dibromide, the Agency has made the determinations below. Refer to Section IV.D. for specific language for label revisions. Revisions in tolerance levels supporting approved uses of diquat dibromide will be accomplished when the Agency evaluates additional data and completes tolerance reassessment for this pesticide.

1. The presence of the contaminant EDB, a potent animal carcinogen, in diquat dibromide products is not expected to pose a significant risk to human health with present uses.

   Rationale: Based on the risk assessment for applicators, food crop uses and drinking water discussed fully in Section III.B., exposure to EDB resulting from diquat use is not expected to be significant. The Agency will carefully evaluate new uses for diquat dibromide from the standpoint of EDB exposure.

2. The Agency will not establish significant new food uses until additional residue chemistry and chronic toxicology data are available to assess existing uses.

   Rationale: It is Agency policy not to establish significant new uses where major data gaps exist. When additional data are evaluated, the Agency will determine whether significant new food uses may be established.

3. The Agency is requiring diquat dibromide products containing 25% active ingredient or greater to be labeled with the signal word "DANGER"(Toxicity Category I). Products containing from 2.5% up to 25% active ingredient must bear the signal word "WARNING"(Toxicity Category II).

   Rationale: Although additional dermal toxicity testing is required, sufficient data have been generated to establish that a Category I hazard exists for diquat dibromide products, 25% active ingredient or greater. By extrapolating from these data, products containing from 2.5% up to 25% active ingredient would be considered Category II, based on dermal toxicity.

4. The Agency is requiring all end-use products with 25% active ingredient or greater and all end-use products with 2.5% active ingredient or greater with domestic uses to be classified for "Restricted Use."

   Rationale: Based on acute and subacute dermal toxicity data, diquat dibromide has the potential to pose a significant risk to users. Restricted use criteria are met for these products for dermal toxicity hazards, defined in 40 CFR Section 162.11. The Agency believes classification of diquat dibromide as a restricted use pesticide is necessary to protect users from the effects of dermal toxicity.

Only certified applicators who have received instructions on the safe handling of pesticides, or those under the direct supervision of certified applicators will be permitted to handle these diquat dibromide products.

5. The Agency is requiring additional precautionary language for dermal exposure concerning the hazard of repeated contact with skin, particularly when open cuts or sores exist, for all diquat dibromide products.

   Rationale: Preliminary findings in acute and subacute toxicological data indicate high dermal toxicity potential, particularly with repeated contact. Inclusion of this precautionary text will emphasize the need for users to exercise caution in handling diquat dibromide products, in order to limit risks from dermal contact.

6. The Agency is imposing additional precautionary labeling (including protective clothing requirements) for diquat dibromide products classified in Toxicity Categories I and II. Specific protective clothing is not required for other products.

   Rationale: These precautionary labeling statements provide specific guidance for persons handling the most hazardous of these products to increase the safety of their usage. This language describes protective clothing and equipment as well as procedures for minimizing exposure to pesticidal materials. Protective clothing will significantly reduce mixer/loader/applicator contact with concentrates and sprays.

7. An interim 24-hr. reentry interval for crop sites, golf courses and rights-of-way is being imposed for all diquat dibromide products with these uses.

   Rationale: Due to potential dermal toxicity hazards and possible exposure to soil and foliar residues, this interval is needed to protect farmworkers and maintenance personnel reentering treated sites. Unprotected persons (i.e, workers not wearing protective clothing) will be prohibited from entering treated sites for a 24-hr. period. A 24-hour reentry interval is imposed as an interim measure for sites where toxicity and exposure criteria trigger data requirements under 40 CFR Section 158.140 and data have not been submitted. Once reentry data are received and evaluated, the reentry interval will be reassessed.

8. An interim 14-day swimming reentry interval for aquatic sites is being imposed for diquat dibromide products with aquatic uses.

   Rationale: Due to potential dermal toxicity hazards and possible exposure to residues from aquatic application, an interim 14-day swimming reentry interval is being imposed to protect individuals reentering treated sites. Although data are not available to determine an appropriate reentry period, a 14-day interval has historically been included on labeling for these products. Therefore, a 14-day rentry interval will be imposed pending evaluation of aquatic dissipation data.

9. The Agency is requiring the following studies to support all existing tolerances in agricultural commodities: Plant and poultry metabolism, storage stability, and analytical method.

   Rationale: Metabolism of diquat dibromide in plants and poultry has not been adequately defined. Plant metabolites have not been quantified. Residues have not been characterized in poultry tissues. No storage stability data are available for crops. An analytical method appropriate for enforcement purposes must be developed for diquat dibromide. Present methodology does not permit adequate monitoring of diquat dibromide residues.

10. The Agency is requiring additional residue data for sugarcane. Residue studies are required for processed sugarcane products (molasses, bagasse, refined sugar).

    Rationale: Adequate data are not available to assess the tolerance for sugarcane or describe residues of diquat in processed sugarcane products.

11. The Agency is requiring residue data together with a petition for establishing tolerances, if residues are found, for soybeans, sorghum (grain), alfalfa, clover, and vetch, grown for seed production.

    Rationale: Review of these uses indicates that the present non-food use classification for these commodities is inappropriate. Since seed from these crops is not under control of the grower, these crops could be directed to human and/or animal consumption, and must be considered food uses.

12. The Agency will require increased tolerances of 0.05 ppm for fruiting and leafy vegetables, and 0.1 ppm for avocados, cottonseed, hops and sugarcane, or submission of additional residue studies to support existing tolerances. Residue data for rice grain and straw must also be submitted for the grain crop grouping.

    Rationale: Available data for irrigated crops do not support existing tolerances for these individual commodities or crop groupings.

13. The Agency will require an increased tolerance to 0.05 ppm for residues in eggs and fat, meat, and meat by-products of cattle, goats, hogs, horses and sheep. Residue data are required for fish and shellfish.

Rationale: Based on reevaluation of available feeding and metabolism studies, 0.05 ppm more accurately reflects residues which are likely to occur in these animal products. Adequate data are not available to determine whether the established tolerances for fish and shellfish are acceptable.

14. The Agency will require an increase in the food additive tolerance for processed potatoes to 1.0 ppm.

    Rationale: Data for weathered residues in dried potatoes indicate that 1.0 ppm is a more appropriate tolerance level than 0.5 ppm.

15. The Agency is requiring a prohibition on planting of crops for which diquat dibromide is not registered, in fields previously treated with diquat dibromide products. End-use products with crop uses must include a crop rotation restriction on labeling.

    Rationale: It is Agency policy to impose restrictions on planting of rotational crops when data are insufficient to assess the impact of planting subsequent crops. This protects the public from possible residues in food and feed resulting from previous pesticidal treatment.

16. The Agency is requiring additional data for acute/subacute and chronic toxicity, environmental fate, and exposure to non-target organisms (including plants).

    Rationale: Available data are insufficient to fully assess the hazards from use of diquat dibromide, or describe the behavior of diquat dibromide in aquatic and terrestrial environments. Preliminary findings from available data are discussed in Section III.C.

17. The Agency is requiring reentry, glove permeability and spray drift data.

    Rationale: Since diquat dibromide is highly toxic via the dermal route of exposure, these data are needed to assess the hazards to persons handling the pesticide and reentering treated areas, and to evaluate exposure resulting from deposition of pesticidal materials downwind from treated sites.

18. The Agency will not revise aquatic use restrictions related to holding of water and measurement of residues, nor modify the potable water food additive regulation for diquat dibromide at this time.

    Rationale: There is presently a 14-day restriction against domestic and irrigation use of water when treated by private applicators. Appropriate chemical analysis to determine that residue levels are less than 0.01 ppm can be performed in lieu of restricting use for 14 days when application is under Federal or State programs. The practicality of "holding" procedures for bodies of water, and the scientific bases for establishing residue levels and measuring residues in aquatic sites treated with diquat dibromide are not firmly established. In addition, adequate data are not available describing the fate of diquat dibromide in aquatic environments. Until additional data are evaluated to determine more practical and appropriate restrictions and tolerances, the existing restrictions and tolerance levels will remain in effect.

19. The Agency is requiring a maximum application rate of 2 lbs. diquat cation per surface acre-foot for aquatic sites.

Rationale: Tolerances for irrigated crops and potable water for diquat dibromide have been established based on a maximum application rate of 2 lbs. diquat cation/surface acre-foot. Application rates above this may exceed established tolerance levels.

20. The Agency is requiring development and submission of specific guidelines for treatment of poisoning from accidental ingestion of diquat dibromide.

Rationale: Since no specific antidote exists for diquat dibromide poisoning, and severe gastrointestinal irritation may result from oral exposure, it is essential to develop specific practical treatment for swallowing of diquat dibromide materials.

21. The Agency will not require endangered species labeling at this time.

Rationale: The Agency is unable to assess hazards to endangered species due to the the lack of critical information concerning the behavior of diquat dibromide in the environment. When required data are available for review, an Office of Endangered Species opinion will be requested. Preliminary endangered species labeling may be required prior to receipt of additional data, however, when the Agency completes generic labeling for aquatic and non-crop pesticides.

22. None of the risk criteria listed in 40 CFR 154.7 for initiating a special review have been met. Therefore, diquat dibromide is not being placed in Special Review at this time.

Rationale: After considering available toxicological data, the Agency has determined that no reason exists for placement of diquat dibromide into Special Review status. Additional toxicological data (except dog feeding study) will be available by mid-1987.

23. While data gaps are being filled, currently registered manufacturing-use and end-use products containing diquat dibromide as the sole active ingredient may be sold, distributed, formulated, and used in the United States. Registrants must provide or agree to develop additional data, as specified in Tables A and B of the Data Appendix. The Agency will issue registrations for substantially similar products and will consider new uses (except those involving significant new food uses) on a case-by-case basis.

Rationale: Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Agency may choose not to cancel or withhold registration if data are missing or are inadequate [see FIFRA Sections 3(c)(2)(B) and 3(c)(7)].

Issuance of this Standard provides a mechanism for identifying data needs. These data will be reviewed and evaluated and the Agency will determine if the data will affect the registration of diquat dibromide.

B. CRITERIA FOR REGISTRATION

To be registered or reregistered under this Standard, products must contain diquat dibromide as the sole active ingredient, bear required labeling, and conform to the product composition, acute toxicity limits, and use pattern requirements listed in this section.

C. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Standard

To be registered or reregistered under this Standard, manufacturing-use products (MP's) must contain diquat dibromide as the sole active ingredient. Each MP formulation proposed for registration must be fully described with an appropriate certification of limits, stating maximum and minimum amounts of the active ingredient and inert ingredients which are present in products, as well as impurities found at greater than 0.1%.

2. Acute Toxicity Limits

The Agency will consider registration of technical grade and manufacturing-use products containing diquat dibromide provided that the product labeling bears appropriate precautionary statements for the acute toxicity category in which each product is placed.

3. Use Patterns

To be registered under this Standard, manufacturing-use products may be labeled for formulation into end-use products for the uses listed below. The Use Index lists all registered uses, as well as approved application rates and frequencies.

-Terrestrial, non-domestic, food uses: Alfalfa,* clover,* potatoes, sorghum,* soybeans,* sugarcane, vetch*

-Terrestrial, non-domestic, non-food uses: Golf courses; manufacturing/industrial/commercial sites; ornamental gardens, shade trees and woody shrubs; parks; and rights-of-way

*Tolerances have not been established for these seed crop uses

-Domestic outdoor uses: Domestic dwellings, patios, and walkways

-Greenhouse non-food uses: Beneath greenhouse benches

-Aquatic food, non-food uses: Canals, drainage ditches, lakes, marshes, ponds, rivers, streams, and waterways

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D. REQUIRED LABELING

All products must bear appropriate labeling as specified in 40 CFR 162.10 and PR Notices 83-2, 83-3. Appendix II contains information on label requirements. All labeling changes must appear on all products released for shipment after July 1988. In addition to the above, the following information must appear on labeling:

1. Ingredients Statement

The ingredient statement must list the active ingredient as diquat dibromide.

2. Use Pattern Statements

All manufacturing-use products must state that they are intended for formulation into end-use products for acceptable use patterns. Labeling must specify sites which are listed in Use Patterns, Section C.3. However, no use may be included on the label where the registrant fails to agree to comply with data requirements in TABLE A for that use pattern.

3. Precautionary Statements

All Products

Under Hazards to Humans and Domestic Animals, add the statement:

> "Repeated contact with skin or contact with open cuts or sores may increase the hazard associated with this product."

Manufacturing-Use Products

a. Hazards to Humans. "Wear a protective suit of one or two pieces that covers all parts of the body except the head, hands, and feet. Wear chemical resistant gloves, and chemical resistant shoes, shoe coverings or boots. Wear goggles or a face shield."

b. Environmental Hazards. "This pesticide is toxic to wildlife. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in a NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA."

End-Use Products

a. Use Classification for Category I products and Category II products for domestic use

> "RESTRICTED USE PESTICIDE: Because diquat dibromide may be highly toxic if absorbed through the skin, this product is only for retail sale to and use by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification."

b. WORKER SAFETY RULES for Category I and II products

> "Keep all unprotected persons, children, livestock, and pets away from treated area or where there is danger of drift. Do not rub eyes or mouth with hands. If you feel sick in any way, STOP work and get help right away (see Practical Treatment section).

HANDLE THE CONCENTRATE ONLY WHEN WEARING THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT: Wear a protective suit of one or two pieces that covers all parts of the body except the head, hands, and feet. Wear chemical resistant gloves, chemical resistant apron, and chemical resistant shoes, shoe coverings or boots. Wear goggles or a face shield. If handling the concentrate with a closed system - long sleeved shirt and long legged pants may be substituted for the protective suit.

WEAR THE FOLLOWING PROTECTIVE CLOTHING DURING APPLICATION, EQUIPMENT REPAIR, EQUIPMENT CLEANING, DISPOSAL OF SPRAY SOLUTIONS AND DURING EARLY REENTRY TO TREATED AREAS: Wear a protective suit of one or two pieces that covers all parts of the body except the head, hands, and feet. Wear chemical resistant gloves and chemical resistant boots, shoes, or shoe coverings. During application only from a tractor with a completely enclosed cab or aerially with an enclosed cockpit - long sleeved shirt and long legged pants may be worn in place of the above protective clothing. Chemical resistant gloves must be available in the cab or cockpit and must be worn while exiting. This alternative clothing is inadequate to protect you during equipment repair, cleaning, or reentry.

IMPORTANT! Before removing gloves, wash them with soap and water. Always wash hands, face, and arms with soap and water before smoking, eating, drinking, or toileting. After work, take off all clothes and shoes. Shower using soap and water. Wear only clean clothes. Do not use contaminated clothing. Wash protective clothing and protective equipment with soap and water after each use. Personal clothing worn during use must be laundered separately from household articles. Clothing and protective equipment heavily contaminated or drenched with diquat dibromide must be disposed of according to state and local regulations. HEAVILY CONTAMINATED OR DRENCHED CLOTHING CANNOT BE ADEQUATELY DECONTAMINATED.

DURING AERIAL APPLICATION, HUMAN FLAGGERS ARE PROHIBITED UNLESS IN TOTALLY ENCLOSED VEHICLES."

c. Environmental Hazards for AQUATIC USES.

"This pesticide is toxic to wildlife. Do not apply directly to water except as specified on this label. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not use treated water for animal consumption, spraying or irrigation within 14 days after treatment. Treatment of dense weed areas can result in oxygen loss from decomposition of dead weeds. This loss can cause fish suffocation. Therefore, treat only 1/3 to 1/2 of the dense weed areas at a time and wait 14 days between treatments. Consult your State Fish and Game agencies before applying this product to public waters."

d. Environmental Hazards for NON-AQUATIC USES.

"This pesticide is toxic to wildlife. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes."

e. Crop Rotation Statement.

"Crops other than those on which diquat dibromide may be applied may not be planted in diquat dibromide-treated soil."

f. Reentry Statements.

All products with crop uses:
"Do not enter or allow entry into treated areas within 24 hours after treatment unless protective clothing is worn."

All products with golf course or rights-of-way uses:
"Do not allow entry of maintenance personnel into treated areas within 24 hours after treatment unless protective clothing is worn."

All products with aquatic uses:
"Do not allow swimming in treated areas within 14 days after treatment."

V. PRODUCTS SUBJECT TO THIS STANDARD

All products containing the pesticide identified in Section II.A. are subject to certain requirements for data submission or changes in composition, labeling or packaging of the product. The applicable requirements depend on whether the product is a manufacturing or end-use product.

Products are subject to this Registration Standard as follows:

A. Manufacturing-use products containing this pesticide are subject to: 1) The restrictions upon use, composition, or packaging listed in Section IV; 2) The data requirements listed in Tables A and B; 3) The labeling requirements specified for manufacturing-use products in Section IV; 4) Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.[2]

B. End-use products containing this pesticide are subject to: 1) The labeling requirements specified for end-use products in Section IV; 2) If not eligible for the formulator's exemption, the data requirements listed in Table A.[3]

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[2] Data requirements are listed in the Tables in Appendix I of this Registration Standard. The Guide to Tables in that Appendix explains how to read the Tables. Table A lists generic data requirements applicable to all products containing the pesticide subject to this Registration Standard. Table B lists product-specific data applicable to manufacturing-use products. The data in Tables A and B need not be submitted by a producer who is eligible for the formulator's exemption.

[3] If you purchase from another producer and use as the source of your active ingredient, only EPA-registered products, you are eligible for the formulator's exemption for generic data concerning that active ingredient (Table A) and product-specific data for the manufacturing-use product you purchase (Table B). Two circumstances nullify this exemption: 1) If you change sources of active ingredient to an unregistered product, formulate your own active ingreident, or acquire your acitve ingredient from a firm with ownership in common with yours, you individually lose the exemption and become subject to the data requirements in Table A; 2) If no producer subject to the generic data requirements in Table A agrees to submit the required data, all end-use producers lose the exemption, and become subject to those data requirements.

VI. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

This portion of the Registration Standard is a notice issued under the authority of FIFRA sec. 3(c)(2)(B). It refers to the data listed in Table A, which are required to be submitted by registrants to maintain in effect the registration of products containing this active ingredient.[4]

A. What are generic data?

Generic data pertain to the properties or effects of a particular active ingredient. Such data are relevant to an evaluation of all products containing that active ingredient regardless of whether the product contains other ingredients. (unless the product bears labeling that would make the data requirement inapplicable).

Generic data may also be data on a "typical formulation" of a product. "Typical formulation" testing is often required for ecological effects studies and applies to all products having that formulation type. These are classed as generic data, and are contained in Table A.

B. Who must submit generic data?

All current registrants are responsible for submitting generic data in response to a data request under FIFRA sec. 3(c)(2)(B) (DCI Notice). EPA has decided, however, not to require a registrant who qualifies for the formulator's exemption (FIFRA sec. 3(c)(2)(D) and § 152.85) to submit generic data in response to a DCI notice if the registrant who supplies the active ingredient in his product is complying with the data request.

If you are not now eligible for a formulator's exemption, you may qualify for one if you change your source of supply to a registered source that does not share ownership in common with your firm. If you choose to change sources of supply, the Confidential Statement of Formula must identify the new source(s) and you must submit a Formulator's Exemption Statement form.

If you apply for a new registration for products containing this active ingredient after the issuance of this Registration Standard, you will be required to submit or cite generic data relevant to the uses of your product if, at the time the application is submitted, the data have been submitted to the Agency by current registrants. If the required data have not yet been submitted, any new registration will be conditioned upon the new registrant's submission or citation of the required data not later than the date upon which current registrants of similar products are required to provide such data. See FIFRA sec. 3(c)(7)(A). If you thereafter fail to comply with the condition of that registration to provide data, the registration may be cancelled (FIFRA sec. 6(e)).

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[4] Registrations granted after issuance of this Standard will be conditioned upon submission or citation of the data listed in this Registration Standard.

C. What generic data must be submitted?

You may determine which generic data you must submit by consulting Table A. That table lists the generic data needed to evaluate current uses of all products containing this active ingredient, the uses for which such data are required, and the dates by which the data must be submitted to the Agency.

D. How to comply with DCI requirements.

Within 90 days of your receipt of this Registration Standard, you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1, enclosed) for each of your products. On that form you must state which of the following six methods you will use to comply with the DCI requirements:

1. You will submit the data, and either--

(a) Submit the existing data that you believe will satisfy the data requirements, or

(b) State that you will secure the data or have made a contract to have any necessary studies completed within the applicable time period.

2. You have entered into an agreement with one or more registrants to jointly develop (or share in the cost of developing) the data, but will not be submitting the data yourself. If you use this method, you must state who will submit the data on which you will rely. You must also provide EPA with documentary evidence that an agreement has been formed which allows you to rely upon the data to be submitted. Such evidence may be: (1) your letter offering to join in an agreement and the other registrant's acceptance of your offer, (2) a written statement by the parties that an agreement exists, or (3) a written statement by the person who will be submitting the data that you may rely upon its submission. The Agency will also require adequate assurance that the person whom you state will provide the data is taking appropriate steps to secure it. The agreement to produce the data need not specify all of the terms of the final arrangement between the parties or a mechanism to resolve the terms.

3. You have attempted to enter into an agreement to jointly develop data, but no other registrant has accepted your offer. You request that EPA not suspend your registration for non-compliance with the DCI. EPA has determined that, as a general policy, it will not suspend the registration of a product when the registrant has in good faith sought and continues to seek to enter into a data development/cost sharing program, but the other registrants developing the data have refused to accept its offer. [If your offer is accepted, you may qualify for Option 2 above by entering into an agreement to supply the data.]

In order to qualify for this method, you must:

1. File with EPA a completed "Certification of Attempt to Enter into an Agreement with other Registrants for Development of Data" (EPA Form 8580-6, enclosed).

2. Provide us with a copy of your offer to the other registrant and proof of the other registrant's receipt of your offer (such as a certified mail receipt). Your offer must, at a minimum, contain the following language or its equivalent:

> [Your company name] offers to share in the burden of producing the data required pursuant to FIFRA sec. 3(c)(2)(B) in the [name of active ingredient] Registration Standard upon terms to be agreed or failing agreement to be bound by binding arbitration as provided by FIFRA section 3(c)(2)(B)(iii).

The remainder of your offer may not in any way attempt to limit this commitment. If the other registrant to whom your offer is made does not accept your offer, and if the other registrant informs us on a DCI Summary Sheet that he will develop and submit the data required under the DCI, then you may qualify for this option. In order for you to avoid suspension under this method, you may not later withdraw or limit your offer to share in the burden of developing the data. In addition, the other registrant must fulfill its commitment to develop and submit the data.

4. You request a waiver of the data requirement. If you believe that a data requirement does not (or should not) apply to your product or its uses, you must provide EPA with a statement of the reasons why you believe this is so. Your statement must address the specific composition or use factors that lead you to believe that a requirement does not apply. Since the Agency has carefully considered the composition and uses of pesticide products in determining that a data requirement applies, EPA does not anticipate that many waivers will be granted. A request for waiver does not automatically extend the timeframes for developing required data, and if your waiver request is denied, your registration may be suspended if you fail to submit the data.

5. You request that EPA amend your registration by deleting the uses for which the data are needed. You are not required to submit data for uses which are no longer on your label.

6. You request voluntary cancellation of the registration of your product(s) for which the data are needed.

E. Procedures for requesting a change in testing protocol.

If you will generate the required data and plan to use test procedures which deviate from (or are not specified in) either EPA's Pesticide Assessment Guidelines or the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit for EPA approval the protocols you propose to use.

You should submit your protocols before beginning testing and await EPA approval, because the Agency will not ordinarily accept as sufficient studies using unapproved protocols. A request for protocol approval will not automatically extend the timeframe for submission of the data, nor will extensions generally be given to conduct studies due to submittal of inappropriate protocols.

F. Procedures for requesting extensions of time.

If you think that you will need more time to generate the data than is allowed by EPA's schedule, you may submit a request for an extension of time. Any request for a time extension which is made as an initial response to a section 3(c)(2)(B) request notice must be submitted in writing to the Product Manager listed at the end of this section and must be made before the deadline for response. Once dates have been committed to and EPA has accepted these commitments, any subsequent requests for a time extension must be submitted in writing to the Office of Compliance Monitoring.

EPA will view failure to request an extension before the response deadline as a waiver of any future claim that there was insufficient time to submit the data. While EPA considers your request, you must strive to meet the deadline for submitting the data.

The extension request should state the reasons why you believe that an extension is necessary and the steps you have taken to meet the testing deadline. Time extensions normally will not be granted due to problems with laboratory capacity or adequacy of funding, since the Agency believes that with proper planning these can be overcome. Time extensions may be considered when joint data development is planned, or when the Agency must approve a new or modified protocol before the study can be begun.

A request for an extension does not automatically extend the timeframe for submission of the data. If EPA denies your request for a time extension and you do not submit the data as requested, EPA may begin proceedings to suspend the registrations of your products.

G. Existing stocks provision upon suspension or cancellation.

EPA will permit continued sale and distribution of existing stocks of a pesticide product which has been suspended or cancelled if doing so would be consistent with the purposes of the Act. However, the Agency has determined that if a registration is suspended for failure to respond to a DCI request under FIFRA sec. 3(c)(2)(B), an existing stocks provision is not consistent with the Act. Accordingly, the Agency does not anticipate granting permission to sell or distribute existing stocks of suspended product except in rare circumstances. If you believe that your product will be suspended or cancelled and that an existing stocks provision should be granted, you have the burden of clearly demonstrating to EPA that granting such permission would be consistent with the Act. The following information must be included in any request for an existing stocks provision:

1. Explanation of why an existing stocks provision is necessary, including a statement of the quantity of existing stocks and your estimate of the time required for their sale or distribution; and

2. Demonstration that such a provision would be consistent with the provisions of FIFRA.

VII. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Under its DCI authority, EPA has determined that certain product-specific data are required to maintain your registrations in effect. Product-specific data are derived from testing using a specific formulated product, and, unlike generic data, generally support only the registration of that product. All such data must be submitted by the dates specified in this Registration Standard.

If you have a manufacturing use product, these data are listed in Table B. As noted earlier, the Agency has decided that it will not routinely require product-specific data for end use products at this time.

In order to comply with the product specific data requirements, you must follow the same procedures as for generic data. See Section VI.D, E, F, and G. You should note, however, that product chemistry data are required for every product, and the only acceptable responses are options VI.D.1. (submit data) or VI.D.6.(cancellation of registration).

Failure to comply with the product-specific data requirements for your products will result in suspension of the product's registration.

VIII. REQUIREMENT FOR SUBMISSION OF REVISED LABELING

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the Agency's assessment of the data supporting the product and its uses. General labeling requirements are set out in 40 CFR 162.10 (see Appendix II - LABELING and SUMMARY). In addition, labeling requirements specific to products containing this pesticide are specified in Section IV.D of this Registration Standard. Applications submitted in response to this notice must include draft labeling for Agency review.

If you fail to submit revised labeling as required, which complies with 40 CFR 162.10 and the specific instructions in Section IV.D., EPA may issue a Notice of Intent to Cancel the registration of your product under FIFRA sec. 6(b)(1).

IX. INSTRUCTIONS FOR SUBMISSION

A. Manufacturing Products (MUPs) containing Diquat Dibromide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division for each product subject to this Registration Standard:

a. The "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1), with appropriate attachments.[5]

b. Confidential Statement of Formula (EPA Form 8570-4).

c. Formulator's Exemption Statement (EPA Form   ).

d. Product Specific Data Report (EPA Form 8580-4).

e. Evidence of compliance with data compensation requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99.

2. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Two copies of any required product-specific data (See Table B).

b. Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

c. Notification of your decision regarding whether you will conduct appropriate residue studies or increase tolerances for particular irrigated crops for which tolerances are not supported.

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[5] If on the Summary Sheet, you commit to develop the data, present arguments that a data requirement is not applicable or should be waived, or submit protocols or modified protocols for Agency review, you must submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This submission is in addition to responding to the Product Manager, and should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted to the Office of Compliance Monitoring.)

3. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the agreed schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

B. End Use Products containing Diquat Dibromide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA Section 3(c)(2)(B) Summary Sheet, with appropriate attachments[5] (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4).

c. Formulator's Exemption Statement (EPA Form), if applicable.

2. Within 9 months from receipt of this document you must submit to the Product Manager:

a. Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft labeling must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text. End-use product labeling must comply specifically with the instructions in Section IV (Regulatory Position and Rationale).

C. Intrastate Products containing Diquat Dibromide as sole active ingredient or in combination with other active ingredients.

These products are being called in for full Federal registration. Producers of these products are being sent a letter instructing them how to submit an application for registration.

D. Addresses

The required information must be submitted to the following address:

Richard F. Mountfort, PM-23
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460

The address for submissions to the Office of Compliance Monitoring is:

Laboratory Data Integrity Program
Office of Compliance Monitoring (EN-342)
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460

APPENDIX I

DATA APPENDICES

GUIDE TO TABLES

Tables A and B contain listings of data requirements for the pesticides covered by this Registration Standard.

Table A contains generic data requirements that apply to the pesticide in all products, including data requirements for which a "typical formulation" is the test substance.

Table B contains product-specific data requirements that apply only to a manufacturing use product.

The data tables are generally organized according to the following format:

1. Data Requirement (Column 1). The data requirements are listed in the order in which they appear in 40 CFR Part 158. The reference numbers accompanying each test refer to the test protocols set out in the Pesticide Assessment Guidelines, which are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

2. Test Substance (Column 2). This column lists the composition of the test substance required to be used for the test, as follows:

TGAI = Technical grade of the active ingredient
PAI = Pure active ingredient
PAIRA = Pure active ingredient, radio labeled
TEP = Typical end use formulation
MP = Manufacturing use product
EP = End use product

3. Use pattern (Column 3). This column indicates the use patterns to which the data requirement applies. Use patterns are the same as those given in 40 CFR Part 158. The following letter designations are used for the given use patterns:

A = Terrestrial, food
B = Terrestrial, non-food
C = Aquatic, food
D = Aquatic, non-food
E = Greenhouse, food
F = Greenhouse, non-food
G = Forestry
H = Domestic outdoor
I = Indoor

4. Does EPA have data? (Column 4). This column indicates one of three answers:

YES - EPA has data in its files that completely satisfy this data requirement. These data may be cited by other registrants in accordance with data compensation requirements of Part 152, Subpart E.

PARTIALLY - EPA has some data in its files, but such data do not fully satisfy the data requirement. In some cases, the Agency may possess data on one of two required species, or may possess data on one test substance but not all. The term may also indicate that the data available to EPA are incomplete. In this case, when the data are clarified, or additional details of the testing submitted by the original data submitter, the data may be determined to be acceptable. If this is the case, a footnote to the table will usually say so.

NO - EPA either possesses no data which are sufficient to fulfill the data requirement, or the data which EPA does possess are flawed scientifically in a manner that cannot be remedied by clarification or additional information.

5. Bibliographic citation (Column 5). If the Agency has acceptable data in its files, this column lists the identifying number of each study. This normally is the Master Record Identification (MRID) number, but may be a GS number if no MRID number has been assigned. Refer to the Bibliography Appendices for a complete citation of the study.

6. Must additional data be submitted? (Column 6). This column indicates whether the data must be submitted to the Agency. If column 3 indicates that the Agency already has data, this column will usually indicate NO. If column 3 indicates that the Agency has only partial data or no data, this column will usually indicate YES. In some cases, even though the Agency does not have the data, EPA will not require its submission because of the unique characteristics of the chemical; because data on another chemical can be used to fulfill the data requirement; or because the data requirement has been waived or reserved. Any such unusual situations will be explained in a footnote to the table.

7. Timeframe for submission (Column 7). If column 5 requires that data be submitted, this column indicates when the data are to be submitted, based on the issuance date of the Registration Standard. The timeframes are those established either as a result of a previous Data Call-In letter, or standardized timeframes established by PR Notice 85-5 (August 22, 1985).

8. Footnotes (at the end of each table). Self-explanatory.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	2/Time Frame for Submission
§158.120 Product Chemistry						
Product Identity						
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI	All	N/A	N/A	Yes	6 Months
61-2 - Discussion of Formation of Impurities	TGAI	All	N/A	N/A	Yes	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	TGAI	All	N/A	N/A	Yes	12 Months
Physical and Chemical Characteristics						
63-2 - Color	TGAI	All	N/A	N/A	Yes	6 Months
63-3 - Physical State	TGAI	All	N/A	N/A	Yes	6 Months
63-4 - Odor	TGAI	All	N/A	N/A	Yes	6 Months
63-5 - Melting Point	TGAI	All	N/A	N/A	Yes	6 Months
63-6 - Boiling Point	TGAI	All	N/A	N/A	Yes	6 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data? 1/	Bibliographic Citation 1/	Must Additional Data be Submitted?	2/ Time Frame for Submission
§158.120 Product Chemistry (Continued)						
Physical and Chemical Characteristics (Continued)						
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	All	N/A	N/A	Yes	6 Months
63-8 - Solubility	TGAI or PAI	All	N/A	N/A	Yes	6 Months
63-9 - Vapor Pressure	PAI	All	N/A	N/A	No 3/	
63-10 - Dissociation constant	PAI	All	N/A	N/A	Yes	6 Months
63-11 - Octanol/water partition coefficient	PAI	All	N/A	N/A	No 4/	
63-12 - pH	TGAI	All	N/A	N/A	Yes	6 Months
63-13 - Stability	TGAI	All	N/A	N/A	Yes	15 Months
Other Requirements:						
64- 1 - Submittal of samples	TGAI, PAI	All	N/A	N/A	No	

1/ Not applicable. Although product chemistry data may been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New requirements have been introduced and previously submitted data must be updated. Therefore bibliographic citations for the old data are not applicable.

2/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document: 6-mo. Date 12/31/86; 12-mo. Date 6/30/87; 15-mo. Date 9/30/87.

3/ Not required because the melting point of the pure form of the active ingredient is >30°C.

4/ Not required because the pure form of the active ingredient is polar.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1]Time Frame for Submission
§158.125 Residue Chemistry					
171-4 - Nature of Residue (Metabolism)					
- Plants	PAIRA	Partially	00055086 00056905 00065600 00065602 00065604 00067156 00067157 00067162 00068221 00115563 00115583 00116728 00121305 00121307	Yes[2]	18 Months
- Livestock	PAIRA and Plant Metabolites	Partially	00065594 00065595 00065596 00065597 00065599 00068229 00071328 00114410 00122705	Yes[3]	18 Months
171-4 - Residue Analytical Method					
- Plant residues	TGAI and Metabolites	Partially	00071325 00115546 00115547 00115559 00116728 00116736 GS0288-002	Yes[4]	12 months
- Animal residues	TGAI and Metabolites	Partially	00071325 00114449 00116739	Yes[5]	12 months
171-4 - Storage Stability	PAI	No		Yes[6]	24 months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1] Time Frame for Submission
§158.125 Residue Chemistry - Continued					
171-4 - Magnitude of the Residue-Residue Studies for Each Food Use					
- Crop Group #1 - Root and Tuber Vegetables Group[7]					
°Crop 1 - Potatoes					
--Crop Field Trials	TEP	Yes	00116728 00140590	No	
- Crop Group #2 - Legume Vegetables Group					
°Crop 1 - Soybeans					
-- Crop Field Trials	TEP	Partially	00115575	Yes[8a]	18 Months
-- Processed Food/Feed	EP	No		Yes[8b]	24 Months
- Crop Group #3 - Cereal Grains Group					
°Crop 1 - Sorghum					
-- Crop Field Trials	TEP	Partially	00115575	Yes[9a]	18 Months
-- Processed Food/Feed	EP	No		Yes[9b]	24 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1/]Time Frame for Submission
§158.125 Residue Chemistry - Continued					
171-4 - Magnitude of the Residue - Residue Studies (Continued)					
- Crop Group #4 - Non-Grass Animal Feeds Group					
°Crop 1 - Alfalfa --Crop Field Trials	TEP	No		Yes[10/]	18 Months
°Crop 2 - Clover --Crop Field Trials	TEP	No		Yes[11/]	18 Months
°Crop 3 - Vetch --Crop Field Trials	TEP	No		Yes[12/]	18 Months
- Miscellaneous Commodities					
°Sugarcane --Crop Field Trials	TEP	Partially	00100410 00140586	Yes[13a,b/]	18 Months
--Processed Food/Feed	EP	Partially	00140586	Yes[13c/]	24 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1]Time Frame for Submission
§158.125 Residue Chemistry - Continued					
171-4 - Magnitude of the Residue in Meat, Milk, Poultry and Eggs					
- Milk	TGAI or Plant Metabolites	Yes	00031841 00140590	No[14a]	
- Meat, Fat, Meat Byproducts of Cattle, Goats, Hogs, Horses and Sheep	TGAI or Plant Metabolites	Yes	00031841 00140582	No[14a,b]	
- Poultry and Eggs	TGAI or Plant Metabolites	Yes[15]	00116739	No[14a,b]	
171-4 - Magnitude of the Residue - Residue Studies					
- Potable Water	EP	Yes	00068228 00068229 00115547 00116739	No[16]	
- Fish	EP	Partially	00135717	Yes[17]	15 Months
- Shellfish	EP	Partially	00068228 00135717	Yes[18]	15 Months
- Irrigated Crops	EP	Partially	00031836	Yes[19,20,21]	18 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

§158.125 Residue Chemistry - Continued

NOTE: All residue data requested in this Standard must be accompanied by information on the duration and conditions of sample storage prior to residue analysis, and by data depicting the stability of diquat residues under the conditions and for the time intervals specified. Since the data required for individual commodities are dependent on metabolism and stability studies, these data should be obtained and submitted prior to any required residue data. It should also be noted that seed crop uses for soybeans, grain sorghum, alfalfa, clover and vetch, are now considered food uses, and are subject to the data requirements discussed above.

1/ Data must be submitted within the indicated timeframe, based on the date of the Guidance Document: 6-mo. Date 12/31/86; 15-mo. Date 9/30/87; 18-mo. Date 12/31/87; 24-mo. Date 6/30/88. For Nature of the Residue in Plants and Magnitude of the Residue in Crops, the timeframes for submitting data are 18 or 24 months, as appropriate, commencing the first planting season following issuance of the Standard. These timeframes will begin with the Spring 1987 planting season and data are due no later than October 1988.

2/ Data must be submitted depicting the distribution and metabolism of ring-labeled (^{14}C) diquat in potato tubers following foliar desiccation; in the grain and forage of a cereal grain crop such as corn, oats, or wheat following foliar desiccation; and in soybeans (mature beans and forage) following foliar desiccation. If the metabolism of diquat differs significantly in these three crops, metabolism data will be required for a representative commodity from each crop group for which there are registered tolerances.

3/ A poultry metabolism study is required. The chickens must be dosed for three days (at least) with ring-labeled (^{14}C) diquat dibromide at a concentration in the total diet which will result in sufficient residues in tissues and eggs to allow characterization. Animals must be killed within 24 hours of the final dose. ^{14}C-residues must be characterized for muscle, liver, kidney and fat. Tissues of (^{14}C) diquat-dosed animals should also be analyzed by enforcement methodology to ascertain that all metabolites of concern are adequately determined by this method.

4/ Method RM-5X-1 (RM-8X-1) (MRID 00116728) must be tested on a variety of crops fortified with diquat at 0.02-0.1 ppm when all the metabolism questions for diquat are resolved.

5/ Method RM-5-B (MRID 00116739) must be tested on a variety of animal tissues fortified with diquat at 0.02-0.1 ppm when all the metabolism questions for diquat are resolved.

6/ Data must be submitted depicting decline over time in levels of diquat residues during storage of treated commodities, under conditions used in residue tests submitted in support of established tolerances on these commodities.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

§158.125 Residue Chemistry - Continued

7/ Presently, potatoes are the only member of this crop group with a registered food use. If food uses are sought on remaining members of this crop group, then residue data will be required for carrot, radish, and sugar beet. The 0.5 ppm food additive tolerance for residues of diquat on processed potatoes should be increased to 1.0 ppm.

8/ a) Data must be submitted depicting residues of concern in or on soybean seeds treated with the 2 lb A.I./gal SC/L (soluble concentrate/liquid) formulation at 0.5 lb cation/A (acre). Samples must be harvested one week after treatment. Tests must be conducted in AR, IN, IA, MN, MS, MO, and OH. b) If detectable residues are found, an appropriate tolerance must be proposed and processing studies will be required.

9/ a) Data must be submitted depicting residues of concern in or on the seed of grain sorghum treated with the 2 lb A.I./gal SC/L at 0.5 lb cation/A. Samples must be harvested one week after treatment. Tests must be conducted in KS, NB, and TX. b) If detectable residues are found, an appropriate tolerance must be proposed and processing studies will be required.

10/ Data must be submitted depicting residues of concern in or on seed from alfalfa treated with the 2 lb A.I./gal SC/L at 0.5 lb cation/A. Samples must be harvested 3 days after treatment. Tests must be conducted in CA, ID, and WA.

11/ Data must be submitted depicting residues of concern in or on seed from clover treated with the 2 lb A.I./gal SC/L at 0.5 lb cation/A. Samples must be harvested 3 days after treatment. Tests must be conducted in CA, MI, MN, NY, OH, OR, and WA.

12/ Data must be submitted depicting residues of concern in or on seed from vetch treated with the 2 lb A.I./gal SC/L at 0.25 lb cation/A. Samples must be harvested 3 days after treatment. Tests must be conducted in MS, OR, and PA.

13/ a) Residue data must be submitted from sugarcane and sugarcane forage harvested 3 months after application in FL or PR, and 5 months after application in HI, of the 2 lb A.I./gal SC/L formulation (as a plant growth regulator) at 0.25 lb cation/A in 3-10 gal of water per acre using aerial equipment. b) Residue data must be submitted from sugarcane forage harvested after spot application of the same formulation (as a herbicide) at 1 lb cation/A by ground spray equipment, in 50-100 gal of water per acre. This test must be conducted in HI on sugarcane also subjected to diquat application as a plant growth regulator. Studies should reflect the maximum number of applications permitted per season when diquat is used as a herbicide. This number must be proposed as a label amendment when these data are submitted. c) Residue data must be submitted from the processed products of sugarcane: molasses, bagasse, and refined sugar. Should residues be found to concentrate upon processing then appropriate food/feed additive tolerances must be proposed. Application of exaggerated rates of diquat may be necessary to determine concentration of residues in the processed products of sugarcane.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

§158.125 Residue Chemistry - Continued

14/ a) Additional data may be required for milk, meat, or eggs if the required metabolism testing reveals metabolites of toxicological concern. b) The egg and meat, fat and meat by-products tolerances should be raised to 0.05 ppm.

15/ On receipt and evaluation of the required poultry metabolism data, the adequacy of these residue data will be assessed.

16/ If the required aquatic metabolism studies indicate the presence of additional degradates of toxicological concern in natural waters following treatment with diquat, additional residue data depicting the levels of such degradates in natural water following registered use will be required.

17/ Additional residue studies on fish employing diquat in water at levels which would be expected at the time of application are required.

18/ Additional residue studies on shellfish utilizing diquat in water at levels which would be expected at the time of application are required.

19/ Data must be submitted reflecting irrigation of tomatoes and mustard greens with natural water which has been treated with diquat to control severe aquatic weed infestations. Such data should reflect residues resulting from both surface and overhead sprinkler irrigation in accordance with standard agricultural practices (i.e., multiple irrigation) using water containing 0.01 ppm diquat residues or water under grower control treated 14 days previously and the crops must be harvested immediately after the final irrigation. Alternatively, a higher tolerance level of 0.05 ppm for these two groups could be proposed. Crop groupings may need to be revised in accordance with updated groupings established in 40 CFR Part 180. These revisions will be considered when tolerances for irrigated crops are reassessed.

20/ Data must be submitted reflecting residues of diquat cation in or on rice grain and straw following production using standard agricultural practices. Such data should reflect the maintenance of flooded fields using diquat treated water.

21/ Data must be submitted reflecting diquat cation residues in or on avocados, cottonseed, hops and sugarcane resulting from irrigation with diquat treated water. Samples should reflect residues likely to result from following standard agricultural practices. Alternatively, a higher tolerance level of 0.1 ppm on these crops could be proposed.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	1/Time Frame for Submission
§158.130 Environmental Fate						
DEGRADATION STUDIES-LAB:						
161-1 - Hydrolysis	TGAI or PAIRA	A,B,D,F,H	Yes	00154100 00154101	No	
Photodegradation						
161-2 - In water	TGAI or PAIRA	A,B,D,F,H	No		Yes	9 Months
161-3 - On soil	TGAI or PAIRA	A	No		Yes	9 Months
161-4 - In Air	TGAI or PAIRA	A	No		No2/	
METABOLISM STUDIES-LAB:						
162-1 - Aerobic Soil	TGAI or PAIRA	A,B,F,H	No		Yes	27 Months
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No		Yes3/	27 Months
162-3 - Anaerobic Aquatic	TGAI or PAIRA	D	No		Yes	27 Months
162-4 - Aerobic Aquatic	TGAI or PAIRA	D	No		Yes	27 Months
MOBILITY STUDIES:						
163-1 - Leaching and Adsorption/Desorption	TGAI or PAIRA	A,B,D,F,H	No		Yes	12 Months
163-2 - Volatility (Lab)	TEP	A,F	No		Yes	12 Months
163-3 - Volatility (Field)	TEP	A,F	No		Reserved4/	

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1]Time Frame for Submission
§158.130 Environmental Fate - Continued						
DISSIPATION STUDIES-FIELD:						
164-1 - Soil	TEP	A,B,F,H	No		Yes	27 Months
164-2 - Aquatic (Sediment)	TEP	D	No		Yes	27 Months
164-3 - Forestry	TEP	-	N/A			
164-4 - Combination and Tank Mixes		-	N/A			
164-5 - Soil, Long-term	TEP	A	No		Reserved[5]	
ACCUMULATION STUDIES:						
165-1 - Rotational Crops (Confined)	PAIRA	A	No		Yes	39 Months
165-2 - Rotational Crops (Field)	TEP	A	No		Reserved[6]	
165-3 - Irrigated Crops	TEP	D	No		Yes	39 Months
165-4 - In Fish	TGAI or PAIRA	A,B,D	No		Yes	12 Months
165-5 - In Aquatic Non-Target Organisms	TEP	D	No		Yes	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

§158.130 Environmental Fate - Continued

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document: 9-mo. Date 3/31/87; 12-mo. Date 6/30/87; 15-mo. Date 9/30/87; 27-mo. Date 9/30/88; 39-mo. Date 9/30/89.

2/ Not required due to the apparent low volatility of diquat dibromide.

3/ An acceptable anaerobic aquatic metabolism study will satisfy the requirement for an anaerobic soil study.

4/ Data will be required based on results of the lab study.

5/ Data will be required if the dissipation rate determined in the field dissipation study indicates that pesticide residues do not readily dissipate in soil.

6/ Data will be required if significant residues of concern are found in the confined study.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted	1/Time Frame for Submission
§158.135 Toxicology						
ACUTE TESTING:						
81-1 - Acute Oral Toxicity - Rat	TGAI	All	Partially	00140572 00091316	Yes2/	9 Months
81-2 - Acute Dermal Toxicity - Rabbit - Rat	TGAI	All	Partially	00061634	Yes2/	9 Months
81-3 - Acute Inhalation Toxicity - Rat	TGAI	All	Partially	00061633	Yes3/	9 Months
81-4 - Primary Eye Irritation - Rabbit	MP	All	No		Yes	9 Months
81-5 - Primary Dermal Irritation - Rabbit	MP	All	No		Yes	9 Months
81-6 - Dermal Sensitization	TGAI	All	Yes	00155475	No	
SUBCHRONIC TESTING:						
82-1 - 90-Day Feeding:						
- Rodent, and	TGAI	A,C,E	No		No4/	
- Non-rodent (Dog)	TGAI	A,C,E	No		Yes5/	18 Months
82-2 - 21-Day Dermal - Rabbit - Rat	TGAI	All	Partially	00140576 00140577	Yes6/	12 Months
82-4 - 21-Day Inhalation: - Rat	TGAI	All	No		Yes7/	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Patterns	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	1/Time Frame for Submission
§158.135 Toxicology - Continued						
CHRONIC TESTING:						
83-1 - Chronic Toxicity -	TGAI	A,C,E				
- Rodent, and			Partially	00079829 00080982 00081508 00140579 00145855	Yes8/	90 Days
- Non-rodent (Dog)			Partially	00140578	Yes9/	50 Months
83-2 - Oncogenicity -	TGAI	A,C,E				
- Rat (preferred), and			Partially	00079829 00080982 00081508 00140579	Yes8/	90 Days
- Mouse (preferred)			Partially	00079830	Yes10/	90 Days
83-3 - Teratogenicity -	TGAI	All				
- Rat			Yes	00145855	No	
- Rabbit			Yes	00061635	No	
83-4 - Reproduction - Rat 2-generation	TGAI	A,C,E	Yes	00140589	No	
MUTAGENICITY TESTING						
84-2 - Gene Mutation (Ames Test)	TGAI	All	Partially	00148843 00148845	Yes	9 Months
84-2 - Structural Chromosomal Aberration	TGAI	All	Partially	00061638	Yes	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	1/Time Frame for Submission
§158.135 Toxicology - Continued						
84-4 - Other Genotoxic Effects	TGAI	All	Yes	00061636 00148844 05014905	Yes11/	
SPECIAL TESTING						
85-1 - General Metabolism	PAI or PAIRA	A,C,E	Yes	00055107	No	
85-2 - Dermal Penetration	Choice	A,C,E	Yes	00031050	No	
OTHER						
- Practical Treatment for Oral Ingestion	Choice	All	No		Yes	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

§158.135 Toxicology - Continued

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document: 90-day Date 9/30/86; 9-mo. Date 3/31/87; 12-mo. Date 6/30/87; 18-mo. Date 12/31/87; 50-mo. Date 8/31/90.

2/ NOEL's must be shown for effects on the gastric system in addition to results of the usual investigational parameters. The causes of death must be accounted for as completely as possible.

3/ The spray mist generated must be of respireable size to assure that diquat will be inhaled and absorbed by the lung. Both vapor and aerosol studies must be conducted and information on the particle size provided.

4/ Although there is no 90-day feeding study with rodents, there is available a 2-year chronic feeding study with rats. Thus, the 2-year study fills this data gap.

5/ If a chronic feeding study in dogs is conducted, this requirement will be deleted.

6/ Available studies do not adequately assess the hematology, clinical chemistry, urinalysis, or histopathological parameters.

7/ A 21-day inhalation study is required rather than a 90-day study. The spray mist generated must be of respireable size to assure that diquat will be inhaled and absorbed by the lung.

8/ Additional historical control data for target tissues and statistical analyses of both neoplastic and non-neoplastic lesions must be submitted.

9/ The available study does not adequately assess the hematology, clinical chemistry, urinalysis or histopathology parameters.

10/ Additional information regarding the existing study must be submitted as follows: a) microscopic readings to include all available tissues not yet examined for all mice in the study; b) individual animal pathology sheets showing the gross necropsy and microscopic findings on the same sheet; c) tables summarizing the pathological findings that clearly show for each tissue the actual number of animals examined and the number of animals with each lesion type; d) explanation for the missing mice.

11/ In order to clarify the issue of potential mutagenicity of diquat, a summary table of all known mutagenicity studies with diquat is required, together with the results and exact references. Copies of these studies should also be submitted. Other mutagenicity study types may be required pending review of this mutagenicity summary table and accompanying studies.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1/]Time Frame for Submission
§158.140 Reentry Protection						
132-1 - Foliar Dissipation	TEP	D,H	No		Yes[2/]	27 Months
132-1 - Soil Dissipation	TEP	A	No		Yes[3/]	27 Months
133-3 - Dermal Exposure	TEP	A	No		Reserved[4/]	
133-4 - Inhalation Exposure	TEP	A	No		Reserved[5/]	
§158.142 Spray Drift						
201-1 - Droplet Size Spectrum	TEP	A	No		Yes[6/]	6 Months
202-1 - Drift Field Evaluation	TEP	A	No		Yes[6/]	6 Months
§158.75 Other Exposure Data						
- Permeability of Protective Clothing	TEP	A,D,F,H	No		Yes[7/]	6 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

§158.140 Reentry Protection , §158.142 Spray Drift, §158.75 Other Exposure Data - Continued

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document: 27-mo. Date 9/30/88.

2/ For each end-use, the registrant is required to propose an acceptable reentry interval. The reentry interval may be based on one of the following criteria: (a) data on dissipation of residues (decline curve), on human exposure to those residues, and on toxicity of the residues; or (b) determination of that time beyond which there are no detectable dislodgeable or inhalable residues remaining in the worker/occupant environment. If the registrant has reason to believe that an end-use will not cause exposure to residues, a request for waiver from this data requirement should be submitted within 6 months of issuance of the Standard.

3/ Soil Dissipation data are required only for uses where workers will be exposed directly to substantial quantities of soil during their work, i.e. for use on potatoes where hand harvesting would be performed.

4/ Human exposure monitoring data may be submitted at the registrant's option.

5/ If the registrant opts to submit human exposure monitoring data, both Dermal Exposure and Inhalation Exposure must be submitted in order to allow for complete interpretation.

6/ The spray drift droplet spectrum and field evaluation may be done together in order to evaluate the droplet spectrums that are associated with actual field use patterns.

7/ Quantitative data must be submitted regarding the permeability of chemical resistant gloves to both diquat dibromide and contaminant EDB. If these data are not available, they must be generated using methods described in American Society of Testing and Materials (ASTM) 739-81 - Standard Test Method for Resistance of Protective Materials to Permeation by Hazardous Liquid Chemicals or an equivalent method.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1]Time Frame for Submission
§158.145 Wildlife and Aquatic Organisms						
AVIAN AND MAMMALIAN TESTING						
71-1 - Acute Avian Oral Toxicity	TGAI	A,B,D,H	Yes	00106559[2] GS9999-001[3]	No	
71-2 - Avian Subacute Dietary Toxicity	TGAI					
- Upland Game Bird, and		A,B,D,(E, F)[4],H	Partially	00116565[3] 00034769[3]	Yes	9 Months
- Waterfowl		A,B,D,H	Partially	00034769[3]	Yes	9 Months
71-3 - Wild Mammal Toxicity	TGAI	-	N/A			
71-4 - Avian Reproduction - Upland Game Bird, and	TGAI	A,B,D	Partially	00119988[3]	Yes	24 Months
- Waterfowl						
71-5 - Simulated Field Testing - Mammals, and - Birds	TEP	-	N/A			
- Actual Field Testing - Mammals, and - Birds	TEP	-	N/A			

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	[1] Time Frame for Submission
§158.145 Wildlife and Aquatic Organisms - Continued						
AQUATIC ORGANISM TESTING						
72-1 - Freshwater Fish Toxicity - Coldwater Fish Species	TGAI	A,B,D,(E,F)[4],H	No		Yes	9 Months
	TEP	D	Yes	00138963[2] 00115858[3] 00138961[2] 00028002[3]	No	
- Warmwater Fish Species	TGAI	A,B,D,H	No		Yes	9 Months
	TEP	D	Yes	00138963[2] 00138962[2] 00115572[3] 00027203[3]	No	
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI	A,B,D,(E,F)[4],H	Yes	00115576[2]	No	
	TEP	D	Partially	00138963[3] 05001465[3] 00115862[3]	Yes	9 Months
72-3 - Acute Toxicity to Estuarine and Marine Organisms - Fish - Mollusk - Shrimp	TGAI	A,B,D	Partially	00062188[3]	Yes[6]	12 Months

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	1/Time Frame for Submission
§158.145 Wildlife and Aquatic Organisms - Continued						
72-4 - Fish Early Life Stage, and Aquatic Invertebrate Life-Cycle	TGAI	A,B,D	No		Yes7/	15 Months
72-5 - Fish - Life Cycle	TGAI	A,B,D	No		Reserved8/	
72-6 - Aquatic Organism Accumulation	TGAI, PAI or Degradation Product	A,B,D	No		Yes9/	12 Months
- Crustacean - Fish - Insect Nymph - Mollusk						
72-7 - Simulated Field Testing - Aquatic Organisms	TEP	A,B,D	No		Reserved5/	
- Actual Field Testing -Aquatic Organisms						

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

§158.145 Wildlife and Aquatic Organisms - Continued

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document: 9-mo. Date 3/31/87; 12-mo. Date 6/30/87; 15-mo. Date 9/30/87.

2/ Study on its own fulfills Guidelines requirements.

3/ Study must be combined with other studies to fulfill Guidelines requirements.

4/ Required to support manufacturing-use product.

5/ Reserved pending receipt and review of fate data.

6/ Required to support the following uses associated with coastal counties: sugarcane, aquatic weed control, and rights-of-way.

7/ Required to support aquatic weed control use and may be required to support sugarcane and rights-of-way use pending results of fate data.

8/ Reserved pending results of partial chronic fish/invertebrate life cycle and fate data.

9/ Refer to Environmental Fate table, study 165-4.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	1/Time Frame for Submission
§158.150 Plant Protection						
121-1 - TARGET AREA PHYTOTOXICITY	TEP	B,D	No		No2/	
NONTARGET AREA PHYTOTOXICITY TIER I						
122-1 - Seed Germination/ Seedling Emergence	TGAI	B,D	No		Yes	9 Months
122-1 - Vegetative Vigor	TGAI	B,D	No		Yes	9 Months
122-2 - Aquatic Plant Growth	TGAI	B,D	No		Yes	9 Months
TIER II						
123-1 - Seed Germination/ Seedling Emergence	TGAI	B,D	No		Reserved3/	
123-1 - Vegetative Vigor	TGAI	B,D	No		Reserved3/	
123-2 - Aquatic Plant Growth	TGAI	B,D	No		Reserved3/	
TIER III						
124-1 - Terrestrial Field	TEP	B	No		Reserved4/	
124-2 - Aquatic Field	TEP	D	No		Reserved4/	

1/ Data must be submitted within the indicated time frame, based on date of the Guidance Document: 9-mo. Date 3/31/87.

2/ Data are required only for Special Review and certain public health situations.

3/ Reserved pending results of Tier I.

4/ Reserved pending results of Tier II.

TABLE A
GENERIC DATA REQUIREMENTS FOR DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	1/Time Frame for Submission
§158.155 Nontarget Insect						
NONTARGET INSECT TESTING - POLLINATORS:						
141-1 - Honey bee acute contact toxicity	TGAI	A,B	No		Yes	9 Months
141-2 - Honey bee - toxicity of residues on foliage	TEP	A,B	No		Reserved2/	
141-4 - Honey bee subacute feeding study	(Reserved)					
141-5 - Field testing for pollinators	TEP	A,B,	No		Reserved2/	

1/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document: 9-mo. Date 3/31/87.

2/ Data from this study are not required at this time. Requirement will depend on results of the acute contact study.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	2/Time Frame for Submission
§158.120 Product Chemistry						
Product Identity:						
61-1 - Product Identity and Disclosure of Ingredients	MP	All	N/A	N/A	Yes	6 Months
61-2 - Description of Beginning Materials and Manufacturing Process	MP	All	N/A	N/A	Yes	6 Months
61-3 - Discussion of Formation of Impurities	MP	All	N/A	N/A	Yes	6 Months
Analysis and Certification of Product Ingredients						
62-1 - Preliminary Analysis	MP	All	N/A	N/A	Yes	12 Months
62-2 - Certification of Limits	MP	All	N/A	N/A	Yes	12 Months
62-3 - Analytical Methods to Verify Certified Limit	MP	All	N/A	N/A	Yes	12 Months
Physical and Chemical Characteristics						
63-2 - Color	MP	All	N/A	N/A	Yes	6 Months
63-3 - Physical State	MP	All	N/A	N/A	Yes	6 Months
63-4 - Odor	MP	All	N/A	N/A	Yes	6 Months

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING DIQUAT DIBROMIDE

Data Requirement	Test Substance	Use Pattern	Does EPA Have Data?1/	Bibliographic Citation1/	Must Additional Data be Submitted?	2/Time Frame for Submission
§158.120 Product Chemistry (Continued)						
Physical and Chemical Characteristics (Continued)						
63-7 - Density, Bulk Density, or Specific Gravity	MP	All	N/A	N/A	Yes	6 Months
63-12 - pH	MP	All	N/A	N/A	Yes	6 Months
63-14 - Oxidizing or Reducing Action	MP	All	N/A	N/A	Yes	6 Months
63-15 - Flammability	MP	All	N/A	N/A	Yes	6 Months
63-16 - Explodability	MP	All	N/A	N/A	Yes	6 Months
63-17 - Storage Stability	MP	All	N/A	N/A	Yes	15 Months
63-18 - Viscosity	MP	All	N/A	N/A	Yes	6 Months
63-19 - Miscibility	MP	All	N/A	N/A	Yes	6 Months
63-20 - Corrosion Characteristics	MP	All	N/A	N/A	Yes	15 Months
Other Requirements:						
64- 1 - Submittal of samples	MP	All	N/A	N/A	No	

1/ Not applicable. Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each manufacturing use product. New requirements have been introduced and previously submitted data must be updated. Therefore bibliographic citations for the old data are not applicable.

2/ Data must be submitted within the indicated time frame, based on the date of the Guidance Document:
6-mo. Date 12/31/86; ; 12-mo. Date 6/30/87; 15-mo. Date 9/30/87.

APPENDIX II

LABELING APPENDICES

SUMMARY-1

LABEL CONTENTS

40 CFR 162.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to the table at the end of this Appendix.

Item 1. PRODUCT NAME - The name, brand or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading.

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text.

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. [40 CFR 162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. [40 CFR 162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container. [40 CFR 162.10(f)]

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. [40 CFR 162.10(g)]

Item 6B. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - Front panel precautionary statements must be grouped together, preferably within a block outline. The table below shows the minimum type size requirements for various size labels.

Size of Label on Front Panel in Square Inches	Signal Word Minimum Type Size All Capitals	"Keep Out of Reach of Children" Minimum Type Size
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement "Keep Out of Reach of Children" must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely. [40 CFR 162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. [40 CFR 162.10 (h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. [40 CFR 162.10(h)(1)(i)]

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. [40 CFR 162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "See Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. [40 CFR 162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. [40 CFR 162.10(h)(2)].

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. [40 CFR 162.10(h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. [40 CFR 162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD - FLAMMABILITY Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in the PHYS/CHEM Labeling Appendix. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) requires that all pesticide formulations/uses be classified for either general or restricted use. Products classified for restricted use may be limited to use by certified applicators or persons under their direct supervision (or may be subject to other restrictions that may be imposed by regulation).

In the Registration Standard, the Agency has (1) indicated certain formulations/uses are to be restricted (Section IV indicates why the product has been classified for restricted use); or (2) reserved any classification decision until appropriate data are submitted.

The Regulatory Position and Rationale states whether products containing this active ingredient are classified for restricted use. If they are restricted the draft label(s) submitted to the Agency as part of your application must reflect this determination (see below).

If you do not believe that your product should be classified for restricted use, you must submit any information and rationale with your application for reregistration. During the Agency's review of your application, your proposed classification determination will be evaluated in accordance with the provisions of 40 CFR 162.11(c). You will be notified of the Agency's classification decision.

Classification Labeling Requirements

If your product has been classified for restricted use, the following label requirements apply:

1. All uses restricted.

   a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 162.10(h)(1)(iv)

   b. Directly below this statement on the front panel, a summary statement of the terms of restriction must appear (including the reasons for restriction if specified in Section I). If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification."

2. Some but not all uses restricted. If the Regulatory Position and Rationale states that some uses are classified for restricted use and some are unclassified, several courses of action are available:

   a. You may label the product for Restricted use. If you do so, you may include on the label uses that are unrestricted, but you may not distinguish them on the label as being unrestricted.

   b. You may delete all restricted uses from your label and submit draft labeling bearing only unrestricted uses.

   c. You may "split" your registration, i.e., register two separate products with identical formulations, one bearing only unrestricted uses, and the other bearing restricted uses. To do so, submit two applications for reregistration, each containing all forms and necessary labels. Both applications should be submitted simultaneously. Note that the products will be assigned separate registration numbers.

Item 9B. MISUSE STATEMENT - All products must bear the misuse statement, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." This statement appears at the beginning of the directions for use, directly beneath the heading of that section.

Item 10A. REENTRY STATEMENT - If a reentry interval has been established by the Agency, it must be included on the label. Additional worker protection statements may be required in accordance with PR Notice 83-2, March 29, 1983.

Item 10B. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix II, STOR, PEST/DIS, and CONT/DIS to determine the storage and disposal instructions appropriate for your products.

Item 10C. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. [40 CFR 162.10]

COLLATERAL LABELING

Bulletins, leaflets, circulars, brochures, data sheets, flyers, or other written or graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

SUMMARY-6

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by. . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

SUMMARY-7

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & cross-bones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of Practical Treatment or First Aid	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked.
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL REQUIRED	PLACEMENT ON LABEL PREFERRED	COMMENTS
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	Refer to Appendix II guide PHYS/CHEM
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9B	Misuse statement	All products	Immediately following heading of directions for use		Required statement is: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."
10A	Reentry statement	PR Notice 83-2 or as determined by the Agency	In the directions for use	Immediately after misuse statement	
10B	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use. Refer to Appendix II guides STOR, CONT/DIS, and PEST/DIS for further information and required statements.
10C	Directions for use	All products	None	None	May be in metric as well as U.S. units

§162.10 Labeling requirements.

(a) General--(1) Contents of the label. Every pesticide product shall bear a label containing the information specified by the Act and the regulations in this Part. The contents of a label must show clearly and prominently the following:

(i) The name, brand, or trademark under which the product is sold as prescribed in paragraph (b) of this section;

(ii) The name and address of the producer, registrant, or person for whom produced as prescribed in paragraph (c) of this section;

(iii) The net contents as prescribed in paragraph (d) of this section;

(iv) The product registration number as prescribed in paragraph (e) of this section;

(v) The producing establishment number as prescribed in paragraph (f) of this section;

(vi) An ingredient statement as prescribed in paragraph (g) of this section;

(vii) Warning or precautionary statements as prescribed in paragraph (h) of this section;

(viii) The directions for use as prescribed in paragraph (i) of this section; and

(ix) The use classification(s) as prescribed in paragraph (j) of this section.

(2) Prominence and legibility. (i) All words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations in this part must be clearly legible to a person with normal vision, and must be placed with such conspicuousness (as compared with other words, statements, designs, or graphic matter on the labeling) and expressed in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(ii) All required label text must:

(A) Be set in 6-point or larger type;

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

(3) Language to be used. All required label or labeling text shall appear in the English language. However, the Agency may require or the applicant may propose additional text in other languages as is considered necessary to protect the public. When additional text in another language is necessary, all labeling requirements will be applied equally to both the English and other-language versions of the labeling.

(4) Placement of Label--(i) General. The label shall appear on or be securely attached to the immediate container of the

pesticide product. For purposes of this Section, and the misbranding provisions of the Act, "securely attached" shall mean that a label can reasonably be expected to remain affixed during the foreseeable conditions and period of use. If the immediate container is enclosed within a wrapper or outside container through which the label cannot be clearly read, the label must also be securely attached to such outside wrapper or container, if it is a part of the package as customarily distributed or sold.

(ii) Tank cars and other bulk containers--(A) Transportation. While a pesticide product is in transit, the appropriate provisions of 49 CFR Parts 170-189, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

(B) Storage. When pesticide products are stored in bulk containers, whether mobile or stationary, which remain in the custody of the user, a copy of the label of labeling, including all appropriate directions for use, shall be securely attached to the container in the immediate vicinity of the discharge control valve.

(5) False or misleading statements. Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.15, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

(i) A false or misleading statement concerning the composition of the product;

(ii) A false or misleading statement concerning the effectiveness of the product as a pesticide or device;

(iii) A false or misleading statement about the value of the product for purposes other than as a pesticide or device;

(iv) A false or misleading comparison with other pesticides or devices;

(v) Any statement directly or indirectly implying that the pesticide or device is recommended or endorsed by any agency of the Federal Government;

(vi) The name of a pesticide which contains two or more principal active ingredients if the name suggests one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling;

(vii) A true statement used in such a way as to give a false or misleading impression to the purchaser;

(viii) Label disclaimers which negate or detract from labeling statements required under the Act and these regulations;

(ix) Claims as to the safety of the pesticide or its ingredients, including statements such as "safe," "nonpoisonous," "noninjurious," "harmless" or "nontoxic to humans and pets" with or without such a qualifying phrase as "when used as directed"; and

(x) Non-numerical and/or comparative statements on the safety of the product, including but not limited to:

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known"

(C) "Pollution approved"

(6) Final printed labeling. (i) Except as provided in paragraph (a)(6)(ii) of this section, final printed labeling must be submitted and accepted prior to registration. However, final printed labeling need not be submitted until draft label texts have been provisionally accepted by the Agency.

(ii) Clearly legible reproductions or photo reductions will be accepted for unusual labels such as those silk-screened directly onto glass or metal containers or large bag or drum labels. Such reproductions must be of microfilm reproduction quality.

(b) Name, brand, or trademark. (1) The name, brand, or trademark under which the pesticide product is sold shall appear on the front panel of the label.

(2) No name, brand, or trademark may appear on the label which:

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an additional name pursuant to § 162.6(b)(4).

(c) Name and address of producer, registrant, or person for whom produced. An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must be qualified by appropriate wording such as "Packed for ***," "Distributed by ***," or "Sold by ***" to show that the name is not that of the producer.

(d) Net weight or measure of contents. (1) The net weight or measure of content shall be exclusive of wrappers or other materials and shall be the average content unless explicitly stated as a minimum quantity.

(2) If the pesticide is a liquid, the net content statement shall be in terms of liquid measure at 68°F (20°C) and shall be expressed in conventional American units of fluid ounces, pints, quarts, and gallons.

(3) If the pesticide is solid or semisolid, viscous or pressurized, or is a mixture of liquid and solid, the net content statement shall be in terms of weight expressed as avoirdupois pounds and ounces.

(4) In all cases, net content shall be stated in terms of the largest suitable units, i.e., "1 pound 10 ounces" rather than "26 ounces."

(5) In addition to the required units specified, net content may be expressed in metric units.

(6) Variation above minimum content or around an average is permissible only to the extent that it represents deviation unavoidable in good manufacturing practice. Variation below a stated minimum is not permitted. In no case shall the average content of the packages in a shipment fall below the stated average content.

(e) Product registration number. The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label on which it appears and shall run parallel to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) Producing establishments registration number. The producing establishment registration number preceded by the phrase "EPA Est.", of the final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

(g) Ingredient statement--(1) General. The label of each pesticide product must bear a statement which contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients; and if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic calculated as elemental arsenic. The active ingredients must be designated by the term "active ingredients" and the inert ingredients by the term "inert ingredients," or the singular forms of these terms when appropriate. Both terms shall be in the same type size, be aligned to the same margin and be equally prominent. The statement "Inert Ingredients, none" is not required for pesticides which contain 100 percent active ingredients. Unless the ingredient statement is a complete analysis of the pesticide, the term "analysis" shall not be used as a heading for the ingredient statement.

(2) Position of ingredient statement. (i) The ingredient statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the ingredient statement cannot be clearly read, the ingredient statement must also appear on such outside container or wrapper. If the size or form of the package makes it impracticable to place the ingredient statement on the front panel of the label, permission may be granted for the ingredient statement to appear elsewhere.

(ii) The text of the ingredient statement must run parallel with other text on the panel on which it appears, and must be clearly distinguishable from and must not be placed in the body of other text.

(3) Names to be used in ingredient statement. The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of Section 25(c)(6).

(4) Statements of percentages. The percentages of ingredients shall be stated in terms of weight-to-weight. The sum of percentages of the active and the inert ingredients shall be 100. Percentages shall not be expressed by a range of values such as "22-25%." If the uses of the pesticide product are expressed as weight of active ingredient per unit area, a statement of the weight of active ingredient per unit volume of the pesticide formulation shall also appear in the ingredient statement.

(5) Accuracy of stated percentages. The percentages given shall be as precise as possible reflecting good manufacturing practice. If there may be unavoidable variation between manufacturing batches, the value stated for each active ingredient shall be the lowest percentage which may be present.

(6) Deterioration. Pesticides which change in chemical composition significantly must meet the following labeling requirements:

(i) In cases where it is determined that a pesticide formulation changes chemical composition significantly, the product must bear the following statement in a prominent position on the label: "Not for sale or use after [date]."

(ii) The product must meet all label claims up to the expiration time indicated on the label.

(7) Inert ingredients. The Administrator may require the name of any inert ingredient(s) to be listed in the ingredient statement if he determines that such ingredient(s) may pose a hazard to man or the environment.

(h) Warnings and precautionary statements. Required warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups; those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) Required front panel statements. With the exception of the child hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD_{50}	Up to and including 50 mg/kg	From 50 thru 500 mg/kg	From 500 thru 5000 mg/kg	Greater than 5000 mg/kg
Inhalation LC_{50}	Up to and including .2 mg/liter	From .2 thru 2 mg/liter	From 2 thru 20 mg/liter	Greater than 20 mg/liter
Dermal LD_{50}	Up to and including 200 mg/kg	From 200 thru 2000	From 2,000 thru 20,000	Greater than 20,000
Eye effects	Corrosive; corneal opacity not reversible within 7 days	Corneal opacity reversible within 7 days; irritation persisting for 7 days	No corneal opacity; irritation reversible within 7 days	No irritation
Skin effects	Corrosive	Severe irritation at 72 hours	Moderate irritation at 72 hours	Mild or slight irritation at 72 hours

(i) Human hazard signal word.--(A) Toxicity Category I. All pesticide products meeting the criteria of Toxicity Category I shall bear on the front panel the signal word "Danger." In addition if the product was assigned to Toxicity Category I on the basis of its oral, inhalation or dermal toxicity (as distinct from skin and eye local effects) the word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word "poison."

(B) Toxicity Category II. All pesticide products meeting the criteria of Toxicity Category II shall bear on the front panel the signal word "Warning."

(C) Toxicity Category III. All pesticide products meeting the criteria of Toxicity Category III shall bear on the front panel the signal word "Caution."

(D) Toxicity Category IV. All pesticide products meeting the criteria of Toxicity Category IV shall bear on the front panel the signal word "Caution."

(E) Use of signal words. Use of any signal word(s) associated with a higher Toxicity Category is not permitted except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

(ii) Child hazard warning. Every pesticide product label shall bear on the front panel the statement "keep out of reach of children." Only in cases where the likelihood of contact with children during distribution, marketing, storage or use is demonstrated by the applicant to be extremely remote, or if the nature of the pesticide is such that it is approved for use on infants or small children, may the Administrator waive this requirement.

(iii) Statement of practical treatment--(A) Toxicity Category I. A statement of practical treatment (first aid or other) shall appear on the front panel of the label of all pesticides falling into Toxicity Category I on the basis of oral, inhalation or dermal toxicity. The Agency may, however, permit reasonable variations in the placement of the statement of practical treatment is some reference such as "See statement of practical treatment on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

(B) Other toxicity categories. The statement of practical treatment is not required on the front panel except as described in paragraph (h)(1)(iii)(A) of this section. The applicant may, however, include such a front panel statement at his option. Statements of practical treatment are, however, required elsewhere on the label in accord with paragraph (h)(2) of this section if they do not appear on the front panel.

(iv) Placement and prominence. All the required front panel warning statements shall be grouped together on the label, and shall appear with sufficient prominence relative to other front panel text and graphic material to make them unlikely to be overlooked under customary conditions of purchase and use. The following table shows the minimum type size requirements for the front panel warning statements on various sizes of labels:

Size of label front panel in square inches	Points	
	Required signal word, all capitals	"Keep out of reach of Children"
5 and under	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	12

(2) Other required warnings and precautionary statements. The warnings and precautionary statements as required below shall appear together on the label under the general heading "Precautionary Statements" and under appropriate subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard" and "Physical or Chemical Hazard."

(i) Hazard to humans and domestic animals. (A) Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. The precautionary paragraph shall be immediately preceded by the appropriate hazard signal word.

(B) The following table depicts typical precautionary statements. These statements must be modified or expanded to reflect specific hazards.

Toxicity category	Precautionary statements by toxicity category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I . . .	Fatal (poisonous) if swallowed [inhaled or absorbed through skin]. Do not breathe vapor [dust] or spray mist]. Do not get in eyes, on skin, or on clothing [Front panel statement of practical treatment required.].	Corrosive, causes eye and skin damage [or skin irritation]. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required.]
II . . .	May be fatal if swallowed [inhaled or absorbed through the skin]. Do not breathe vapors [dust or spray mist]. Do not get in eyes, on skin, or on clothing. [Appropriate first aid statements required.].	Causes eye [and skin] irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required.].
III . . .	Harmful if swallowed [inhaled or absorbed through the skin]. Avoid breathing vapors [dust or spray mist]. Avoid contact with skin [eyes or clothing]. [Appropriate first aid statement required.].	Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV . . .	[No precautionary statements required.].	[No precautionary statements required.].

(ii) Environmental hazards. Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury or damage. Examples of the hazard statements and the circumstances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD_{50} of 100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(B) If a pesticide intended for outdoor use contains an active ingredient with a fish acute LC_{50} of 1 ppm or less, the statement "This Pesticide is Toxic to Fish" is required.

(C) If a pesticide intended for outdoor use contains an active ingredient with an avian acute oral LD_{50} of 100 mg/kg or less, or a subacute dietary LC_{50} of 500 ppm or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(D) If either accident history or field studies demonstrate that use of the pesticide may result in fatality to birds, fish or mammals, the statement "This pesticide is extremely toxic to wildlife (fish)" is required.

(E) For uses involving foliar application to agricultural crops, forests, or shade trees, or for mosquito abatement treatments, pesticides toxic to pollinating insects must bear appropriate label cautions.

(F) For all outdoor uses other than aquatic applications the label must bear the caution "Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

(iii) Physical or chemical hazards. Warning statements on the flammability or explosive characteristics of the pesticide are required as follows:

Flash point	Required text
(A) PRESSURIZED CONTAINERS	
Flash point at or below 20°F; if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
Flash point above 20°F and not over 80°F or if the flame extension is more than 18 in. long at a distance of 6 in. from the flame.	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
(B) NONPRESSURIZED CONTAINERS	
At or below 20°F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 20°F and not over 80°F	Flammable. Keep away from heat and open flame.
Above 80°F and not over 150°F	Do not use or store near heat or open flame.

(i) Directions for Use--(1) General requirements--(i) Adequacy and clarity of directions. Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment.

(ii) Placement of directions for use. Directions may appear on any portion of the label provided that they are conspicuous enough to be easily read by the user of the pesticide product. Directions for use may appear on printed or graphic matter which accompanies the pesticide provided that:

(A) If required by the Agency, such printed or graphic matter is securely attached to each package of the pesticide, or placed within the outside wrapper or bag;

(B) The label bears a reference to the directions for use in accompanying leaflets or circulars, such as "See directions in the enclosed circular." and

(C) The Administrator determines that it is not necessary for such directions to appear on the label.

(iii) Exceptions to requirement for direction for use--(A) Detailed directions for use may be omitted from labeling of pesticides which are intended for use only by manufacturers of products other than pesticide products in their regular manufacturing processes, provided that:

(1) The label clearly shows that the product is intended for use only in manufacturing processes and specifies the type(s) of products involved.

(2) Adequate information such as technical data sheets or bulletins, is available to the trade specifying the type of product involved and its proper use in manufacturing processes;

(3) The product will not come into the hands of the general public except after incorporation into finished products; and

(4) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(B) Detailed directions for use may be omitted from the labeling of pesticide products for which sale is limited to physicians, veterinarians, or druggists, provided that:

(1) The label clearly states that the product is for use only by physicians or veterinarians;

(2) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment; and

(3) The product is also a drug and regulated under the provisions of the Federal Food, Drug and Cosmetic Act.

(C) Detailed directions for use may be omitted from the labeling of pesticide products which are intended for use only by formulators in preparing pesticides for sale to the public, provided that:

(1) There is information readily available to the formulators on the composition, toxicity, methods of use, applicable restrictions or limitations, and effectiveness of the product for pesticide purposes;

(2) The label clearly states that the product is intended for use only in manufacturing, formulating, mixing, or repacking for use as a pesticide and specifies the type(s) of pesticide products involved;

(3) The product as finally manufactured, formulated, mixed, or repackaged is registered; and

(4) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(2) Contents of Directions for Use. The directions for use shall include the following, under the headings "Directions for Use":

(i) The statement of use classification as prescribed in 162.10(j) immediately under the heading "Directions for Use."

(ii) Immediately below the statement of use classification, the statement "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

(iii) The site(s) of application, as for example the crops, animals, areas, or objects to be treated.

(iv) The target pest(s) associated with each site.

(v) The dosage rate associated with each site and pest.

(vi) The method of application, including instructions for dilution, if required, and type(s) of application apparatus or equipment requried.

(vii) The frequency and timing of applications necessary to obtain effective results without causing unreasonable adverse effects on the environment.

(viii) Specific limitations on reentry to areas where the pesticide has been applied, meeting the requirements concerning reentry provided by 40 CFR Part 170.

(ix) Specific directions concerning the storage and disposal of the pesticide and its container, meeting the requirements of 40 CFR Part 165. These instructions shall be grouped and appear under the heading "Storage and Disposal." This heading must be set in type of the same minimum sizes as required for the child hazard warning (See Table in § 162.10(h)(1)(iv).)

(x) Any limitations or restrictions on use required to prevent unreasonable adverse effects, such as:

(A) Required intervals between application and harvest of food or feed crops.

(B) Rotational crop restrictions.

(C) Warnings as required against use on certain crops, animals, objects, or in or adjacent to certain areas.

(D) [Reserved]

(E) For restricted use pesticides, a statement that the pesticide may be applied under the direct supervision of a certified applicator who is not physically present at the site of application but nonetheless available to the person applying the pesticide, unless the Agency has determined that the pesticide may only be applied under the direct supervision of a certified applicator who is physically present.

(F) Other pertinent information which the Administrator determines to be necessary for the protection of man and the environment.

(j) Statement of Use Classification. By October 22, 1976, all pesticide products must bear on their labels a statement of use classification as described in paragraphs (j)(1) and (2) of this section. Any pesticide product for which some uses are classified for general use and others for restricted use shall be separately labeled according to the labeling standards set forth in this subsection, and shall be marketed as separate products with different registration numbers, one bearing directions only for general use(s) and the other bearing directions for restricted use(s) except that, if a product has both restricted use(s) and general use(s), both of these uses may appear on a product labeled for restricted use. Such products shall be subject to the provisions of § 162.10(j)(2).

(1) General Use Classification. Pesticide products bearing directions for use(s) classified general shall be labeled with the exact words "General Classification" immediately below the heading "Directions for Use." And reference to the general classification that suggests or implies that the general utility of the pesticide extends beyond those purposes and uses contained in the Directions for Use will be considered a false or misleading statement under the statutory definitions of misbranding.

(2) Restricted Use Classification. Pesticide products bearing direction for use(s) classified restricted shall bear statements of restricted use classification on the front panel as described below:

(i) Front panel statement of restricted use classification. (A) At the top of the front panel of the label, set in type of the same minimum sizes as required for human hazard signal words (see table in § 162.10(h)(1)(iv)), and appearing with sufficient prominence relative to other text and graphic material on the front panel to make it unlikely to be overlooked under customary conditions of purchase and use, the statement "Restricted Use Pesticide" shall appear.

(B) Directly below this statement on the front panel, a summary statement of the terms of restriction imposed as a precondition to registration shall appear. If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification." If, however, other regulatory restrictions are imposed, the Administrator will define the appropriate wording for the terms of restriction by regulation.

(k) Advertising. [Reserved]

[40 FR 28268, July 3, 1975; 40 FR 32329, Aug. 1, 1975; 40 FR 38571, Aug. 21, 1975, as amended at 43 FR 5786, Feb. 9, 1978]

PHYS/CHEM-1

PHYSICAL/CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. All Other Pressurized Containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and not over 80°F.	Flammable. Keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.

STORAGE INSTRUCTIONS FOR PESTICIDES

Heading:

All products are required to bear specific label instructions about storage and disposal. Storage and disposal instructions must be grouped together in the directions for use portion of the label under the heading STORAGE AND DISPOSAL. Products intended solely for domestic use need not include the heading "STORAGE AND DISPOSAL."

Storage Instructions:

All product labels are required to have appropriate storage instructions. Specific storage instructions are not prescribed. Each registrant must develop his own storage instructions, considering, when applicable, the following factors:

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.

2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.

3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.

5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.

6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

PESTICIDE DISPOSAL INSTRUCTIONS

The label of all products, except those intended solely for domestic use, must bear explicit instructions about pesticide disposal. The statements listed below contain the exact wording that must appear on the label of these products:

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."

2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients that are Acute Hazardous Wastes (see list in this Appendix) or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, skin or eye irritation potential, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

> "Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

3. The labels of all products, except those intended for domestic use, containing active or inert ingredients that are Toxic Hazardous Wastes (see list in this Appendix) or meet any of the criteria in 40 CFR 261, Subpart C for a hazardous waste must bear the following pesticide disposal statement:

> "Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

4. Labels for all other products, except those intended for domestic use, must bear the following pesticide disposal statement:

> "Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

5. Products intended for domestic use only must bear the following disposal statement: "Securely wrap original container in several layers of newspaper and discard in trash."

PESTICIDE ACTIVE INGREDIENTS THAT ARE ACUTE HAZARDOUS WASTES

I. PESTICIDES ON THE "E" LIST (with RCRA # and CAS # [40 CFR 261.33(e)]

Acrolein	P003	107-13-1
Aldicarb	P070	116-06-3
Aldrin	P004	309-00-2
Allyl alcohol	P005	107-18-6
Aluminum phosphide	P006	1302-45-0
4-Aminopyridine (Avitrol)	P008	504-24-5
Arsenic acid	P010	7778-39-4
Arsenic pentoxide	P011	1303-28-2
Arsenic trioxide	P012	1327-53-3
Calcium cyanide	P021	592-01-8
Carbon disulfide	P022	75-15-0
p-Chloroaniline	P024	106-47-8
Cyanides (soluble cyanide salts not otherwise specified)	P030	
Cyanogen chloride	P031	506-77-4
Dieldrin	P037	60-57-1
O,O-Diethyl S-[2-ethylthio)ethyl] phosphorodithioate (disulfoton)	P039	298-04-4
O,O-Diethyl O-pyrazinyl phosphorothioate (Zinophos®)	P040	297-97-2
Dimethoate	P044	60-51-5
O,O-Dimethyl O-p-nitrophenyl phosphorothioate (methyl parathion)	P071	298-00-0
4,6-Dinitro-o-cresol and salts	P047	534-52-1
4,6-Dinitro-o-cyclohexylphenol	P034	131-89-5
Dinoseb	P020	88-85-7
Endosulfan	P050	115-29-7
Endothall	P088	129-67-9
Endrin	P051	72-20-8
Famphur	P097	52-85-7
Fluoroacetamide	P057	640-19-7
Heptachlor	P059	76-48-8
Hexachlorohexahydro-exo,exo-dimethanonaphthalene (Isodrin)	P069	465-73-6
Hydrocyanic acid	P063	74-90-8
Methomyl	P066	16752-77-5
alpha-Naphthylthiourea (ANTU)	P072	86-88-41
Nicotine and salts	P075	54-11-5
Octamethylpyrophosphoramide (OMPA, schradan)	P085	152-16-9
Parathion	P089	56-38-2
Phenylmercuric acetate (PMA)	P092	62-38-4
Phorate	P094	298-02-2
Potassium cyanide	P098	151-50-8
Propargyl alcohol	P102	107-19-7
Sodium azide	P105	26628-22-8
Sodium cyanide	P106	143-33-9
Sodium fluoroacetate	P058	62-74-8

Strychnine and salts	P108	57-24-9 60-41-3
O,O,O,O-Tetraethyl dithiopyrophosphate (sulfotepp)	P109	3689-24-5
Tetraethyl pyrophosphate	P111	107-49-3
Thallium sulfate	P115	7446-18-6
Thiofanox	P045	39196-18-4
Toxaphene	P123	8001-35-2
Warfarin (>0.3%)	P001	81-81-2
Zinc phosphide (>10%)	P122	1314-84-7

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II. PESTICIDES DERIVED FROM TRI-, TETRA-, AND PENTACHLOROPHENOLS [40 CFR 261.31]

2-Chloroethyl 2-(2,4,6-trichlorophenoxy) ethyl ether	F027	5324-22-1
Dehydroabietylammonium pentachlorophenoxide	F027	35109-57-0
Erbon	F027	136-25-4
O-ethyl O-(2,4,5-trichlorophenyl) ethylphosphonothioate	F027	327-98-0
2,2'-Methylenebis (3,4,6-trichlorophenol) (Hexachlorophene)	F027	70-30-4
--Potassium salt of	F027	67923-62-0
--Sodium salt of	F027	3247-34-5
--Disodium salt of	F027	5736-15-2
Pentachlorophenol	F027	87-86-5
--Potassium salt of	F027	7778-73-6
--Sodium salt of	F027	131-52-2
--Zinc salt of	F027	2917-32-0
--Zinc salt of N-alkyl (C_{16}-C_{18})-1,3-propanediamine	F027	
--Pentachlorophenyl laurate	F027	3772-94-9
Potassium trichlorophenate (2,4,6)	F027	2591-21-1
Potassium trichlorophenate (2,4,5)	F027	35471-43-3
Silvex	F027	93-72-1
--2-Butoxyethyl ester	F027	19398-13-1
--Butoxypolypropoxypropyl ester	F027	53404-07-2
--Butoxypropyl ester	F027	25537-26-2
--Diethanolamine salt	F027	51170-59-3
--Diisopropanolamine salt	F027	53404-09-4
--Dimethylamine salt	F027	55617-85-1
--Dipropylene glycol isobutyl ether ester	F027	53535-26-5
--Ethanolamine salt	F027	7374-47-2
--2-Ethylhexyl ester	F027	53404-76-5
--Isooctyl ester	F027	53404-14-1

--Isopropanolamine salt	F027	53404-13-0
--Monohydroxylaluminum salt	F027	69622-82-8
--Polypropoxypropyl ester	F027	83562-66-7
--Potassium salt	F027	2818-16-8
--Propylene glycol isobutyl ether ester	F027	53466-84-5
--Sodium salt	F027	37913-89-6
--Triethanolamine salt	F027	17369-89-0
--Triethylamine salt	F027	53404-74-3
--Triisopropanolamine salt	F027	53404-75-4
--Tripropylene glycol isobutyl ether ester	F027	53535-30-1
Sodium 2-(2,4,5-trichlorophenoxy) ethyl sulfate	F027	3570-61-4
Tetrachlorophenols	F027	25167-83-3
--Alkylamine*amine salt (as in fatty acids of coconut oil)	F027	
--Potassium salt	F027	53535-27-6
--Sodium salt	F027	25567-55-9
2,4,5-Trichlorophenol	F027	95-95-4
2,4,6-Trichlorophenol	F027	88-06-2
2,4,5-Trichlorophenol salt of 2,6-bis[(dimethylamino)methyl] cyclohexanone	F027	53404-83-4
2,4,5-Trichlorophenol, sodium salt	F027	136-32-3
2,4,6-Trichlorophenol, sodium salt	F027	3784-03-0
2,4,5-Trichlorophenoxyacetic acid	F027	93-79-8
--Alkyl C-12 amine salt	F027	53404-84-5
--Alkyl C-13 amine salt	F027	53404-85-6
--Alkyl C-14 amine salt	F027	53535-37-8
--N,N-diethylethanolamine salt	F027	53404-86-7
--Dimethylamine salt	F027	6369-97-7
--N,N-dimethyllinoleylamine salt	F027	53404-88-9
--N,N-dimethyloleylamine salt	F027	53404-89-0
--N-oleyl-1,3-propylene diamine salt	F027	53404-87-8
--Sodium salt	F027	13560-99-1
--Triethanolamine salt	F027	3813-14-7
--Triethylamine salt	F027	2008-46-0
--Alkyl (C3H7 - C7H9) ester	F027	
--Amyl ester	F027	120-39-8
--Butoxyethoxypropyl ester	F027	1928-58-1
--2-Butoxyethyl ester	F027	2545-59-7
--Butoxypropyl ester	F027	1928-48-9
--Butyl ester	F027	93-79-8
--Dipropylene glycol isobutyl ether ester	F027	53535-31-2
--2-Ethylhexyl ester	F027	1928-47-8
--Isobutyl ester	F027	4938-72-1

--Isopropyl ester	F027	93-78-7
--Propylene glycol isobutyl ether ester	F027	53466-86-7
--Tripropylene glycol isobutyl ether ester	F027	53535-32-3
4-(2,4,5-Trichlorophenoxy)butyric acid [2,4,5-TB]	F027	93-80-1
2-(2,4,5-Trichlorophenoxy)ethyl hydrogen sulfate [2,4,5-TES]	F027	69633-04-1
1,4',5'-Trichloro-2'-(2,4,5-trichlorophenoxy) methanesulfonanilide [Edolan U]	F027	69462-14-2

PESTICIDES THAT ARE TOXIC HAZARDOUS WASTES

PESTICIDES ON THE "F" LIST [40 CFR 261.33(f)] (with	RCRA #, and	CAS #
Acetone	U002	67-64-1
Acrylonitrile*	U009	107-13-1
Amitrole	U011	61-82-5
Benzene*	U019	71-43-2
Bis(2-ethylhexyl)phthalate	U028	117-81-7
Cacodylic acid	U136	75-60-5
Carbon tetrachloride*	U211	56-23-5
Chloral (hydrate) (chloroacetaldehyde)	U034	302-17-0
Chlordane, technical*	U036	57-74-9
Chlorobenzene*	U037	108-90-7
4-Chloro-m-cresol	U039	59-50-7
Chloroform*	U044	67-66-3
o-Chlorophenol	U048	95-57-8
Creosote	U051	8021-39-4
Cresylic acid (cresols)*	U052	1319-77-3
Cyclohexane	U056	110-82-7
Cyclohexanone	U057	108-94-1
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one (Kepone, chlordecone)	U142	143-50-0
1,2-Dibromo-3-chloropropane (DBCP)	U066	96-12-8
Dibutyl phthalate	U069	84-74-2
S-2,3-(Dichloroallyl diisopropyl-thiocarbamate) (diallate,Avadex)	U062	2303-16-4
o-Dichlorobenzene*	U070	95-50-1
p-Dichlorobenzene*	U072	106-46-7
Dichlorodifluoromethane (Freon 12®)	U075	75-71-8
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide (pronamide, Kerb®)	U192	23950-58-5
Dichloro diphenyl dichloroethane (DDD)	U060	72-54-8
Dichloro diphenyl trichloroethane (DDT)	U061	50-29-3
Dichloroethyl ether	U025	1191-17-9
2,4-Dichlorophenoxyacetic, salts and esters (2,4-D)*	U240	94-75-7
1,2-Dichloropropane	U083	8003-19-8
1,3-Dichloropropene (Telone)	U084	542-75-6
Dimethyl phthalate	U102	131-11-3
Epichlorohydrin (1-chloro-2,3-epoxypropane)	U041	106-89-8
Ethyl acetate	U112	141-78-6
Ethyl 4,4'-dichlorobenzilate (chlorobenzilate)	U038	510-15-6

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*Proposed for deletion by TCLP proposal

Ethylene dibromide (EDB)	U067	106-93-4
Ethylene dichloride*	U077	107-06-2
Ethylene oxide	U115	75-21-8
Formaldehyde	U122	50-00-0
Furfural	U125	98-01-1
Hexachlorobenzene*	U127	118-74-1
Hexachlorocyclopentadiene	U130	77-47-4
Hexachloroethane*	U131	67-72-1
Hydrofluoric acid	U134	7664-39-3
Isobutyl alcohol*	U140	78-83-1
Lead acetate	U144	301-04-2
Lindane*	U129	58-89-9
Maleic hydrazide	U148	123-33-1
Mercury	U151	7439-97-6
Methoxychlor*	U247	72-43-5
Methyl alcohol (methanol)	U154	67-56-1
Methyl bromide	U029	74-83-9
Methyl chloride	U045	74-87-3
2,2'-Methylenebis (3,4,6-trichlorophenol) (hexachlorophene) [acute waste per 261.31]	U132	70-30-4
Methylene chloride*	U080	75-09-2
Methyl ethyl ketone*	U159	78-93-3
4-Methyl-2-pentanone (methyl isobutyl ketone)	U161	108-10-1
Naphthalene	U165	91-20-3
Nitrobenzene*	U169	98-95-3
p-Nitrophenol	U170	100-02-7
Pentachloroethane	U184	76-01-7
Pentachloronitrobenzene (PCNB)	U185	82-68-8
Pentachlorophenol* [acute waste per 261.31]	U242	87-86-5
Phenol*	U188	108-95-2
Pyridine*	U196	110-86-1
Resorcinol	U201	108-46-3
Safrole	U203	94-59-7
Selenium disulfide	U205	7488-56-4
Silvex [acute waste per 261.31]	U233	93-72-1
1,1,2,2-Tetrachloroethane*	U209	79-34-5
Tetrachloroethylene*	U210	127-18-4
2,3,4,6-Tetrachlorophenol* [acute waste per 261.31]	U212	
Thiram	U244	137-26-8
Toluene*	U220	108-88-3
1,1,1-Trichloroethane* (methyl chloroform)	U226	71-55-6
Trichloroethylene*	U228	79-01-6
Trichloromonofluoromethane (Freon 11®)	U121	75-69-4
2,4,5-Trichlorophenol* [acute waste per 261.31]	U230	95-95-4
2,4,6-Trichlorophenol* [acute waste per 261.31]	U231	88-06-2

2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)* [acute waste per 261.31]	U232	93-76-5
Warfarin (<0.3%)	U248	81-81-2
Xylene	U239	1330-20-7
Zinc phosphide (<10%)	U249	1314-84-7

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CONTAINER DISPOSAL INSTRUCTIONS

The label of each product must bear container disposal instructions appropriate to the type of container.

1. Domestic use products must bear one of the following container disposal statements:

Container Type	Statement
Non-aerosol products (bottles, cans, jars)	Do not reuse container (bottle, can, jar). Rinse thoroughly before discarding in trash.
Non-aerosol products (bags)	Do not reuse bag. Discard bag in trash.
Aerosol products	Replace cap and discard containers in trash. Do not incinerate or puncture.

2. All other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused[1], dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording)

1/ Manufacturer may replace this phrase with one indicating whether and how fiber drum may be reused.

APPENDIX III

USE INDEX APPENDIX

DIQUAT DIBROMIDE*

TYPE PESTICIDE: Herbicide, Desiccant, Plant Regulator

FORMULATIONS:
FI (35.3%)
SC/L (0.021 lb/gal, 0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.105 lb/gal, 0.106 lb/gal, 0.2 lb/gal, 0.4 lb/gal, 0.5 lb/gal, 2 lb/gal, 0.19%, 0.38%, 1.85%, 2.36%)
RTU (0.094%, 0.23%)

GENERAL WARNINGS AND LIMITATIONS: A nonselective contact herbicide for noncrop weed control, aquatic weed control, and a plant regulator and desiccant for agricultural seed crops. Avoid spray contact with food crops or ornamental plants. Chemical becomes inactivated upon contact with soil. The dosages for this chemical were calculated using the cation by weight.

Agricultural Crop Tolerances	(other than those listed in the text):
Avocados	0.02 ppm
Cottonseed	0.02 ppm
Cucurbits	0.02 ppm
Fish	0.1 ppm
Fruits, citrus	0.02 ppm
Fruits, pome	0.02 ppm
Fruits, small	0.02 ppm
Fruits, stone	0.02 ppm
Grasses, forage	0.1 ppm
Hops	0.02 ppm
Legumes, forage	0.1 ppm
Nuts	0.02 ppm
Shellfish	0.1 ppm
Vegetables, fruiting	0.02 ppm
Vegetables, leafy	0.02 ppm
Vegetables, seed and pod	0.02 ppm

Livestock Tolerances:	
Cattle, fat	0.02 ppm
Cattle, mbyp	0.02 ppm
Cattle, meat	0.02 ppm
Eggs	0.02 ppm
Goats, fat	0.02 ppm
Goats, mbyp	0.02 ppm
Goats, meat	0.02 ppm
Hogs, fat	0.02 ppm
Hogs, mbyp	0.02 ppm
Hogs, meat	0.02 ppm
Horses, fat	0.02 ppm
Horses, mbyp	0.02 ppm
Horses, meat	0.02 ppm
Milk	0.02 ppm
Poultry, fat	0.02 ppm
Poultry, mbyp	0.02 ppm

*6,7-dihydrodipyrido(1,2-a:2',1'-c)pyrazinediinium dibromide

DIQUAT DIBROMIDE

GENERAL WARNINGS AND LIMITATIONS (continued)

Poultry, meat	0.02 ppm
Sheep, fat	0.02 ppm
Sheep, mbyp	0.02 ppm
Sheep, meat	0.02 ppm

Definition of Terms:
fl.oz - fluid ounce(s)

TIME REQUIRED FOR CONTROL: Not located.

PHYTOTOXICITY TO TARGET WEEDS: Wilting, necrosis.

PHYTOTOXICITY TO CROPS: Not located.

MODE OF ACTION: Causes the formation of free radicals during photosynthesis which acts to disrupt membrane permeability.

BROADLEAF WEEDS CONTROLLED:

PAAAAAE	Annual weeds
PAAAAAC	Broadleaf weeds
PAZAAAC	Chickweed
PAAAAAF	Perennial weeds
PBMABAA	Sedge
PAAAAAA	Weeds

GRASSES AND OTHER MONOCOTS CONTROLLED:

PCAAZBA	Bermudagrass
PCAAAAA	Grasses

AQUATIC WEEDS CONTROLLED:

PCSABAA	Bladderwort	
PFDABAA	Cattail	(a)
PBBABBA	Coontail	
PCRAAAB	Duckweed	
PCHACAA	Elodea	
PDJABAA	Naiad	
PIIACAA	Pithophora	
PAAAABN	Pondweed	
PEPACBA	Salvinia rotundifolia	
PIXACAA	Spirogyra	
PECABBA	Waterhyacinth	
PAKAEBA	Waterlettuce	
PCDABAA	Watermilfoil	

(a) Top kill only.

PLANT REGULATOR CLAIMS:

PZZZZZB	Desiccant
PZZZZZA	Plant regulator (prevent tasseling)

	Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
	TERRESTRIAL FOOD CROP	
	(Agricultural Crops)	
	General Warnings and Limitations: Do not graze treated areas or feed treated forage to livestock. Do not use seed from treated plants for food, feed or oil purposes.	
/15021BA /23003BA	Alfalfa (seed crop) Clover (seed crop)	N.F.
	0.38-0.50 (2 lb/gal SC/L)	Broadcast. Postharvest desiccation. Apply in 15 to 30 gallons of water. For aerial application apply in 5 to 10 gallons of water. Desiccation is complete in 3 to 10 days.
/14013AA	Potato	0.02 ppm (vegetable, root crop) Application should be made at least 7 days before harvest. General Information: Do not apply to drought stressed potatoes. Apply a non-ionic surfactant.
	0.25 (2 lb/gal SC/L)	Broadcast. Preharvest desiccation. Apply in 50 to 100 gallons of water for ground application or 5 to 10 gallons of water for aerial application. Allow a minimum of 5 days between applications.
/24006BA	Sorghum (Grain) (seed crop)	N.F.
	0.38-0.50 (2 lb/gal SC/L)	Broadcast. Preharvest desiccation. Apply in 15 to 30 gallons of water per acre by ground and 5 to 10 gallons by air. Apply within 1 to 2 weeks of harvest and when seeds have not more than 30 percent moisture.

	Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
/15010BA	Soybean (seed crop)	N.F.
	0.38-0.50 (2 lb/gal SC/L)	Broadcast. Preharvest desiccation. Apply in 15 to 30 gallons of water per acre by ground and 5 to 10 gallons by air. Apply 1 week before harvest.
/25003AA	Sugarcane	0.05 ppm Do not apply within 5 months of harvest. General Information: Add a non-ionic surfactant.
	0.25 (2 lb/gal SC/L)	Use limited to FL, HI, and PR. Broadcast. Plant regulator. Apply during flower initiation period (first 3 weeks in September) to prevent flowering (tasseling) of cane. Apply by aircraft in 3 to 10 gallons of water per acre.
	0.50-1.00 (2 lb/gal SC/L)	Use limited to HI. Spot treatment. For control of annual weeds and sedge. Apply in 50 to 100 gallons of water per acre. Use power sprayer with boom, or hand sprayer with wand to thoroughly wet weeds.
/23024BA	Vetch (seed crop)	N.F.
	0.25 (2 lb/gal SC/L)	Broadcast. Preharvest desiccation. Apply in 15 to 30 gallons of water per acre by ground and 5 to 10 gallons by air. Desiccation is complete in 3 to 10 days.

TERRESTRIAL NON-FOOD CROP

(Ornamental Plants and Forest Trees)

General Warnings and Limitations: Apply a non-ionic surfactant. Apply full coverage to the point of run-off.

/330070A	Golf Course	
	1 part product/ 5-20 parts water (0.021 lb/gal, 0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.106 lb/gal, 0.2 lb/gal SC/L) (1.85% SC/L)	Directed spray. Thoroughly wet weeds. Repeat applications as needed. Do not water treated areas for 24 to 36 hours after application.

Site, Dosage and Formulation (1b cation/A)	Tolerance, Use, Limitations
Golf Course (continued)	
1 part product/32 parts water (0.4 lb/gal SC/L)	Directed spray. Apply full coverage to thoroughly wet weeds.
1 part product/10 parts water (2.36% SC/L)	
1 part product/ 20-40 parts water (0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
1 part product/50 parts water (0.4 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
1 part product/50-100 parts water (0.5 lb/gal SC/L)	Directed spray. Use higher dosage for mature weeds. Repeat application as needed.
1 part product/50-100 parts water (2 lb/gal SC/L)	Directed spray. Apply to young weeds.
(fairways) 5.4-10.89 (0.08 lb/gal SC/L)	Directed spray. Use on dormant Bermudagrass, Centipedegrass, St. Augustinegrass, and Zoysia grass fairways. Thoroughly wet weeds.
/310030A Ornamental Gardens	
1 part product/ 5-20 parts water (0.021 lb/gal, 0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.106 lb/gal, 0.2 lb/gal SC/L) (1.85% SC/L)	Directed spray. Thoroughly wet weeds. Repeat applications as needed. Do not water treated areas for 24 to 36 hours after application.
1 part product/32 lparts water (0.4 lb/gal SC/L) or	Directed spray. Apply full coverage to thoroughly wet weeds.

	Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
	Ornamental Gardens (continued)	
	1 part product/10 parts water (2.36% SC/L)	
	1 part product/ 20-40 parts water (0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/ 50 parts water (0.4 lb/gal, 0.5 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/50-100 parts water (2 lb/gal SC/L)	Directed spray. Apply to young weeds.
/350000A	Ornamental Shade Trees	
	1 part product/ 100 parts water (0.5 lb/gal SC/L)	Directed spray. Treat when weeds are 1 to 6 inches high. Thoroughly wet weeds. Repeat application as needed.
/340040A	Ornamental Woody Shrubs	
	1 part product/ 100 parts water (0.5 lb/gal SC/L)	Directed spray. Use a shield to protect desired foliage. Treat when weeds are 1 to 6 inches high. Thoroughly wet weeds. Repeat application as needed.

Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations

TERRESTRIAL NON-FOOD CROP

(Noncrop, Wide Area, and General Indoor/Outdoor Treatments)

General Warnings and Limitations: Apply a non-ionic surfactant. Apply full coverage to the point of run-off.

/670110A **Driveways**

1 part product/ 5-20 parts water (0.021 lb/gal, 0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.106 lb/gal, 0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat applications as needed. Do not water treated areas for 24 to 36 hours after application.
1 part product/ 32 parts water (0.4 lb/gal SC/L)	Directed spray. Apply full coverage to thoroughly wet weeds.
1 part product/ 10 parts water (2.36% SC/L)	
1 part product/ 20-40 parts water (0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
1 part product/ 50 parts water (0.4 lb/gal, 0.5 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
1 part product/50-100 parts water (2 lb/gal SC/L)	Directed spray. Apply to young weeds.

/670150A **Fencerows**

1 part product/ 5-20 parts water (0.021 lb/gal, 0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.106 lb/gal, 0.2 lb/gal SC/L) or	Directed spray. Thoroughly wet weeds. Repeat applications as needed. Do not water treated areas for 24 to 36 hours after application.

	Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
	Fencerows (continued)	
	1 part product/ 32 parts water (0.4 lb/gal SC/L)	Directed spray. Apply full coverage to thoroughly wet weeds.
	1 part product/ 10 parts water (2.36% SC/L)	
	1 part product/ 20-40 parts water (0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/ 50 parts water (0.4 lb/gal, 0.5 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/50-100 parts water (2 lb/gal SC/L)	Directed spray. Apply to young weeds.
/670090A	**Industrial Sites**	
	50-200 gal product/ A (0.19%, 0.38% SC/L) (0.094% RTU)	Directed spray. Application may be made any time during the growing season. Spray until weeds are thoroughly wet. Repeat applications should be made to control perennials and late germinating annual weeds.
	1 part product/50-100 parts water (0.5 lb/gal SC/L)	Directed spray. Use the higher dosage for mature weeds. Repeat application as needed.
	1 part product/50-100 parts water (2 lb/gal SC/L)	Directed spray. Apply to young weeds.

	Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
/670000A	**Noncrop Areas**	General Information: Noncrop Areas include rights-of-way, substations, areas around electric utilities, commercial buildings, manufacturing plants, storage yards, rail yards, and non-flooded portions of ponds, lakes, and ditches.
	1 part product/ 5-20 parts water (0.021 lb/gal, 0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.106 lb/gal, 0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat applications as needed. Do not water treated areas for 24 to 36 hours after application.
	1 part product/ 32 parts water (0.4 lb/gal SC/L)	Directed spray. Apply full coverage to thoroughly wet weeds.
	1 part product/ 10 parts water (2.36% SC/L)	
	1 part product/ 20-40 parts water (0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/ 50 parts water (0.4 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/50-100 parts water (0.5 lb/gal SC/L)	Directed spray. Use the higher dosage for mature weeds. Repeat application as needed.
	1 part product/50-100 parts water (2 lb/gal SC/L)	Directed spray. Apply to young weeds.

	Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
	DOMESTIC OUTDOOR	
	(Household)	
/630030A	Domestic Dwellings, Outdoor	
	-- (0.23% RTU)	Spot treatment. Spray weeds thoroughly. Spray weeds in early growing stages when moisture and temperatures promote growth.
/670120A	Patios, Walkways	
		General Information: Apply a non-ionic surfactant. Apply full coverage to the point of runoff.
	1 part product/ 5-20 parts water (0.021 lb/gal, 0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.106 lb/gal, 0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat applications as needed. Do not water treated areas for 24 to 36 hours after application.
	1 part product/ 32 parts water (0.4 lb/gal SC/L)	Directed spray. Apply full coverage to thoroughly wet weeds.
	1 part product/ 10 parts water (2.36% SC/L)	
	1 part product/ 20-40 parts water (0.2 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/ 50 parts water (0.4 lb/gal SC/L)	Directed spray. Thoroughly wet weeds. Repeat application as needed.
	1 part product/50-100 parts water (2 lb/gal SC/L)	Directed spray. Apply to young weeds.

Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations

AQUATIC NON-FOOD

(Aquatic Sites)

General Warnings and Limitations: Do not use the treated areas for animal consumption, swimming, spraying, irrigation or domestic purposes for 14 days after treatment. Do not apply to aquatic sites in Florida. Do not apply to muddy water. Apply a surfactant. A copper sulfate pretreatment may be advised when algae and submerged weeds are present. Local conditions may affect the use of this chemical. Consult Agricultural Extension Services for specific recommendations as to dosage and time of application, and for control of other weeds.

/65021MA Drainage Ditches
/65021MB
/65013MA Lakes, Ponds
/65013MB

1.6-4.2 (0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.105 lb/gal, 0.106 lb/gal, 0.2 lb/gal, 0.4 lb/gal, 0.5 lb/gal, 2 lb/gal SC/L) 20-40 gal product/A (1.85%, 2.36% SC/L)	Water treatment. For control of submerged weeds. Dilute and inject below the water surface, or pour directly into the water while moving slowly over the area in a boat. Apply early in the season before weed growth has reached the surface.
2.24-8.40 (0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.105 lb/gal, 0.106 lb/gal, 0.2 lb/gal, 0.41b/gal, 0.5 lb/gal, 2 lb/gal SC/L) 28-84 gal product/A (1.85%, 2.36% SC.L)	Water treatment. For control of *Pithophora* spp. and *Spirogyra* spp. Repeat application may be necessary for heavy infestations or where reinfestations may occur from seed, fragmentation or escape.

Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
Drainage Ditches cluster (continued)	
4-15 (0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.105 lb/gal, 0.106 lb/gal, 0.2 lb/gal, 0.4 lb/gal, 0.5 lb/gal, 2 lb/gal SC/L)	Water treatment. For control of coontail and Elodea.
40 gal product/A (2.36% SC/L)	
12-18 gal product/ 1,000 sq.ft (0.08 lb/gal SC/L)	Foliar treatment. For control of floating weeds. Apply in sufficient water (150 to 200 gallons) to thoroughly wet weeds. Use the higher dosage for late season applications. For aerial application of waterlettuce use 7.5 gallons of water per surface acre.
0.80-2.0 (0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.105 lb/gal, 0.106 lb/gal, 0.2 lb/gal, 0.4 lb/gal, 0.5 lb/gal, 2 lb/gal SC/L)	
8-12 fl.oz/1,000 sq.ft (0.4 lb/gal SC/L)	
10-15 gal product/A 2.36% SC/L)	
1.66-2.0 (0.08 lb/gal, 0.083 lb/gal, 0.1 lb/gal, 0.106 lb/gal, 0.2 lb/gal, 0.4 lb/gal, 0.5 lb/gal, 2 lb/gal SC/L)	Foliar treatment. For control of cattail and duckweed. Apply in 30 to 150 gallons of water. Apply before flowering of weeds or as a late season treatment. Repeat application as needed.
1 part product/ 5 parts water (0.1 lb/gal SC/L)	

	Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
	Drainage Ditches cluster (continued)	
	16 fl.oz/1,000 sq.ft (0.4 lb/gal SC/L)	
	20 gal product/A (2.36% SC/L)	
/65033MA /65033MB /65032MA /65032MB	Marshes Streams, Rivers, Waterways, and Canals	
	1.66-3.22 (0.083 lb/gal SC/L) 2.00-4.00 (0.2 lb/gal SC/L) 20-40 gal product/A (1.85% SC/L)	Water treatment. For control of submerged weeds. Dilute and inject below the water surface, or pour directly into the water while moving slowly over the area in a boat. Apply early in the season before weed growth has reached the surface.
	2.3-8.4 (0.083 lb/gal, 0.2 lb/gal SC/L) 28-84 gal product/A (1.85% SC/L)	Water treatment. For control of *Pithophora* spp. and *Spirogyra* spp. Repeat application may be necessary for heavy infestations or where reinfestations may occur from seed, fragmentation or escape.
	6.9-11.6 (0.083 lb/gal SC/L) 4.00 (0.2 lb/gal SC/L) 84-140 gal product/A (1.85% SC/L)	Water treatment. For control of *coontail* and *Elodea*.
	0.83-1.24 (0.083 lb/gal SC/L) 1.00-1.50 (0.2 lb/gal SC/L) 10-15 gal product/A (1.85% SC/L)	Foliar treatment. For control of floating weeds. Apply in sufficient water (150 to 200 gallons) to thoroughly wet foliage. Use the higher dosage for late season applications.

Site, Dosage and Formulation (lb cation/A)	Tolerance, Use, Limitations
Marshes cluster (continued)	
2.00 (0.2 lb/gal SC/L)	Foliar treatment. For control of cattail and duckweed. Apply in 100 gallons of water and thoroughly wet foliage. Repeat application as needed.

AERIAL AND TANK MIX APPLICATIONS

9001500
AAAAAAA

Aerial Application

--	Refer to

TERRESTRIAL FOOD CROPS
(Agricultural Crops)
Alfalfa (seed crop), Clover (seed crop), Potato, Sorghum (Grain) (seed crop), Soybean (seed crop), Sugarcane, Vetch (seed crop)

AQUATIC NON-FOOD
(Aquatic Sites)
Drainage Ditches, Lakes, Ponds

DIQUAT DIBROMIDE

Listing of Registered Pesticide Products by Formulation

&035.3002 35.3% formulation intermediate
diquat dibromide (032201)
000239-02276

&100.0215 0.021 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
008123-00066

&100.0815 0.08 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
001769-00174 010827-00035

&100.0815 0.083 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
008123-00037 008123-00048 010088-00013 010088-00035
011515-00029 011547-00007 011547-00031 011694-00040
045128-00016

&100.1015 0.1 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

&100.1015 0.105 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
000334-00255

&100.1115 0.106 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
004828-00064

&100.2015 0.2 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

&100.4015 0.4 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
005080-00004 008959-00009

&100.5015 0.5 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
011214-00018

&102.0015 2 lb/gal soluble concentrate/liquid
diquat dibromide (032201)
000239-01663

&200.1915 0.19% soluble concentrate/liquid
diquat dibromide (032201)
010383-00003

DIQUAT DIBROMIDE

Listing of Registered Pesticide Products by Formulation (continued)

&200.3815 0.38% soluble concentrate/liquid
  diquat dibromide (032201)
    010383-00004

&201.8515 1.85% soluble concentrate/liquid
  diquat dibromide (032201)
    009205-00010

&202.3615 2.36% soluble concentrate/liquid
  diquat dibromide (032201)
    001685-00064

&200.0916 0.094% liquid-ready to use
  diquat dibromide (032201)
    010088-00017 010383-00002

&200.2316 0.23% liquid-ready to use
  diquat dibromide (032201)
    010583-00010

9999999 State Label Registrations

AZ Reg. No.
010583-09353 010583-09354 037830-08362 037830-08363

FL Reg. No.
000239-05850 006020-03371 006020-03376 013437-08873
023335-04068 023335-04069 033356-03494 037347-03123
037347-03124 037347-05455

NM Reg. No.
010583-03260

OH Reg. No.
007587-09122

TX Reg. No.
010583-08653

DIQUAT DIBROMIDE

Appendix B

Listing by Site/Pest and Site/Formulation/Registration Number

BROADLEAF WEEDS CONTROLLED:

PAAAAAE	Annual weeds
PAAAAAC	Broadleaf weeds
PAZAAAC	Chickweed
PAAAAAF	Perennial weeds
PBMABAA	Sedge
PAAAAAA	Weeds

GRASSES AND OTHER MONOCOTS CONTROLLED:

PCAAZBA	Bermudagrass
PCAAAAA	Grasses

AQUATIC WEEDS CONTROLLED:

PCSABAA	Bladderwort
PFDABAA	Cattail
PBBABBA	Coontail
PCRAAAB	Duckweed
PCHACAA	Elodea
PDJABAA	Naiad
PIIACAA	Pithophora
PAAAABN	Pondweed
PEPACBA	Salvinia rotundifolia
PIXACAA	Spirogyra
PECABBA	Waterhyacinth
PAKAEBA	Waterlettuce
PCDABAA	Watermilfoil

PLANT REGULATOR CLAIMS:

PZZZZZB	Desiccant
PZZZZZA	Plant regulator (prevent tasseling)

TERRESTRIAL FOOD CROP

(Agricultural Crops)

/15021BA Alfalfa (seed crop)
PZZZZZB Desiccant
(2 lb/gal SC/L)
000239-01663

Listing by Site/Pest and Site/Formulation/Registration Number (continued)

/23003BA	Clover (seed crop)
PZZZZZB	Desiccant
	(2 lb/gal SC/L)
	000239-01663
/14013AA	Potato
PZZZZZB	Desiccant
	(2 lb/gal SC/L)
	000239-01663
/24006BA	Sorghum (Grain) (seed crop)
PZZZZZB	Desiccant
	(2 lb/gal SC/L)
	000239-01663
/15010BA	Soybean (seed crop)
PZZZZZB	Desiccant
	(2 lb/gal SC/L)
	000239-01663
/25003AA	Sugarcane
PAAAAAE	Annual weeds
PZZZZZA	Plant regulator (prevent tasseling)
PBMABAA	Sedge
	(2 lb/gal SC/L)
	000239-01663
/23024BA	Vetch (seed crop)
PZZZZZB	Desiccant
	(2 lb/gal SC/L)
	000239-01663

TERRESTRIAL NON-FOOD CROP

(Ornamental Plants and Forest Trees)

/330070A	Golf Course
PAZAAAC	Chickweed
PCAAAAA	Grasses
PAAAAAA	Weeds
	(0.021 lb/gal SC/L)
	008123-00066
	(0.08 lb/gal SC/L)
	001769-00174 010827-00035

Listing by Site/Pest and Site/Formulation/Registration Number (continued)

Golf Course (continued)

(0.083 lb/gal SC/L)
008123-00037 010088-00013 010088-00035 011515-00029
011547-00007 011547-00031 011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

/310030A Ornamental Gardens
PCAAAAA Grasses
PAAAAAA Weeds
(0.021 lb/gal SC/L)
008123-00066

(0.08 lb/gal SC/L)
001769-00174 010827-00035

(0.083 lb/gal SC/L)
008123-00037 008123-00048 010088-00013 010088-00035
011515-00029 011547-00007 011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

Listing by Site/Pest and Site/Formulation/Registration Number (continued)

Ornamental Gardens (continued)

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

/350000A **Ornamental Shade Trees**
PAAAAAC Broadleaf weeds
PCAAAAA Grasses
(0.5 lb/gal SC/L)
011214-00018

/340040A **Ornamental Woody Shrubs**
PAAAAAC Broadleaf weeds
PCAAAAA Grasses
(0.5 lb/gal SC/L)
011214-00018

TERRESTRIAL NON-FOOD CROP

(Noncrop, Wide Area, and General Indoor/Outdoor Treatments)

/670110A **Driveways**
PCAAAAA Grasses
PAAAAAA Weeds
(0.021 lb/gal SC/L)
008123-00066

(0.08 lb/gal SC/L)
001769-00174 010827-00035

Driveways (continued)

(0.083 lb/gal SC/L)
008123-00037 008123-00048 010088-00013 010088-00035
011515-00029 011547-00007 011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

/670150A Fencerows
PCAAAAA Grasses
PAAAAAA Weeds
(0.021 lb/gal SC/L)
008123-00066

(0.08 lb/gal SC/L)
001769-00174 010827-00035

(0.083 lb/gal SC/L)
008123-00037 008123-00048 010088-00013 010088-00035
011515-00029 011547-00007 011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

Listing by Site/Pest and Site/Formulation/Registration Number (continued)

Fencerows (continued)

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

/670090A Industrial Sites
PAAAAAC Broadleaf weeds
PCAAAAA Grasses
(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(0.19% SC/L)
010383-00003

(0.38% SC/L)
010383-00004

(0.094% RTU)
010088-00017 010383-00002

/670000A Noncrop Areas
PCAAAAA Grasses
PAAAAAA Weeds
(0.021 lb/gal SC/L)
008123-00066

Listing by Site/Pest and Site/Formulation/Registration Number (continued)

Noncrop Areas (continued)

(0.08 lb/gal SC/L)
001769-00174 010827-00035

(0.083 lb/gal SC/L)
008123-00037 008123-00048 010088-00013 010088-00035
011515-00029 011547-00007 011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

DOMESTIC OUTDOOR

(Household)

/630030A	Domestic Dwellings, Outdoor
PCAAZBA	Bermudagrass
PAAAAAC	Broadleaf weeds
PCAAAAA	Grasses
PAAAAAF	Perennial weeds

(0.23% RTU)
010583-00010

/670120A **Patios, Walkways**
PCAAAAA Grasses
PAAAAAA Weeds
(0.021 lb/gal SC/L)
008123-00066

(0.08 lb/gal SC/L)
001769-00174 010827-00035

(0.083 lb/gal SC/L)
008123-00037 008123-00048 010088-00013 010088-00035
011515-00029 011547-00007 011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

AQUATIC NON-FOOD

(Aquatic Sites)

/65021MA **Drainage Ditches**
/65021MB

Pest (see lists above)
(0.08 lb/gal SC/L)
001769-00174 010827-00035

Listing by Site/Pest and Site/Formulation/Registration Number (continued)

Drainage Ditches (continued)

(0.083 lb/gal SC/L)
008123-00037 010088-00013 011515-00029 011547-00031
011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

(0.105 lb/gal SC/L)
000334-00255

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

/65013MA
/65013MB
Lakes, Ponds

Pest (see lists above)
(0.08 lb/gal SC/L)
001769-00174 010827-00035

(0.083 lb/gal SC/L)
008123-00037 010088-00013 011515-00029 011547-00031
011694-00040 045128-00016

(0.1 lb/gal SC/L)
002155-00043 002155-00063 002155-00064 003837-00023
004000-00062 005197-00037 009313-00014 012310-00014

Listing by Site/Pest and Site/Formulation/Registration Number (continued)

Lakes, Ponds (continued)

(0.105 lb/gal SC/L)
000334-00255

(0.106 lb/gal SC/L)
004828-00064

(0.2 lb/gal SC/L)
000239-02279 000491-00201 006762-00023 008123-00102
010292-00013 010827-00078

(0.4 lb/gal SC/L)
005080-00004 008959-00009

(0.5 lb/gal SC/L)
011214-00018

(2 lb/gal SC/L)
000239-01663

(1.85% SC/L)
009205-00010

(2.36% SC/L)
001685-00064

/65033MA Marshes
/65033MB

Pest (see lists above)
(0.083 lb/gal SC/L)
045128-00016

(0.2 lb/gal SC/L)
010292-00013 010827-00078

(1.85% SC/L)
009205-00010

/65032MA Streams, Rivers, Waterways, and Canals
/65032MB

Pest (see lists above)
(0.083 lb/gal SC/L)
045128-00016

(0.2 lb/gal SC/L)
010292-00013 010827-00078

Streams, Rivers, Waterways, and Canals (continued)

(1.85% SC/L)
009205-00010

EPA Index to Pesticide Chemicals

DIQUAT DIBROMIDE

Auxiliary Documentation

Cancelled Reg. No.	Cancellation Date
5-40	3/05/85
239-2247	3/14/85
239-2395	3/14/85
10120-16	1/29/85
11524-4	3/28/85

The following Reg. Nos. could not be located and have been left out of this report.

478-114
9205-16
10663-11

The aquatic site dosages were calculated using a 1 acre and a water depth of 2 feet area.

APPENDIX IV

BIBLIOGRAPHY APPENDICES

GUIDE TO USE OF THIS BIBLIOGRAPHY

1. CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Standard. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2. UNITS OF ENTRY. The unit of entry in this bibliography is called a "study." In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3. IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by "Master Record Identifier," or MRID, number. This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for a further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine-character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number is also to be used whenever specific reference is needed.

4. FORM OF ENTRY. In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards of the American National Standards Institute (ANSI), expanded to provide for certain special needs.

a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b. Document Date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four-digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c. Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d. Trailing Parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:

   (1) Submission Date. The date of the earliest known submission appears immediately following the word "received."

   (2) Administrative Number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.

   (3) Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

   (4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456-A; the second, 123456-B; the 26th, 123456-Z; and the 27th, 123456-AA.

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
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00031050 Feldmann, R.J.; Maibach, H.I. (1974) Percutaneous penetration of some pesticides and herbicides in man. Toxicology and Applied Pharmacology 28(?):126-132. (Also in unpublished submission received Apr 23, 1980 under 10279-7; submitted by Purdue Frederick Co., Norwalk, Conn.; CDL:242321-R)

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APPENDIX V

FORMS APPENDICES

OMB Approval No. 2000-0468

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET	EPA REGISTRATION NO.
PRODUCT NAME	
APPLICANT'S NAME	DATE GUIDANCE DOCUMENT ISSUED

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(ii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-1 (10-82)

OMB Approval No. 2000-0468

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:	GUIDANCE DOCUMENT DATE ACTIVE INGREDIENT

NAME OF FIRM	EPA COMPANY NUMBER

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to enter into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following required items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to be bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was made to the following firm(s) on the following date(s):

NAME OF FIRM	DATE OF OFFER

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s), if any of the firms named in paragraph (3) above have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly inform me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This statement does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	SIGNATURE	DATE

EPA Form 8580-6 (10-82)

FORMULATOR'S EXEMPTION STATEMENT
(40 CFR 152.85)

EPA File Symbol/Reg. No. ______________ Product Name ______________________

Applicant's Name and Address ____

____

____

____

As an authorized representative of the applicant for registration of the product identified above, I hereby certify that:

(1) This product contains the active ingredient(s): ________________

____

____

(2) Each active ingredient listed in paragraph (1) is present solely as the result of the incorporation into the product (during formulation or packaging) of another product which contains that active ingredient, which is registered under FIFRA sec. 3, and which is purchased by us from another producer.

(3) Indicate by circling (A) or (B) below which paragraph applies:

(A) An accurate Confidential Statement of Formula (EPA Form 8570-4) for the above identified product is attached to this statement. That formula statement indicates, by company name, registration number and product name, the source of the active ingredient(s) listed in paragraph (1).

OR

(B) The Confidential Statement of Formula dated __________ on file with the EPA is complete, current and accurate and contains the information required on the current CSF Form No. 8570-4. The registered source(s) of the active ingredient(s) listed in paragraph (1) is/are listed below:

Active ingredient	Source: Product name and Reg. No.

Signature ______________________________

Date ______________ Title ______________________________

EPA Form (April 1985)